DOCUMENT RESUME

ED 221 966 EC 143 296

TITLE In Retrospect, 1980-81: Special Education Research. Special Education Research and Evaluation.
INSTITUTION Dallas Independent School District, Tex. Dept. of Research and Evaluation.
PUB DATE Dec 81
NOTE 236p.

EDRS PRICE MF01/PC10 Plus Postage.
DESCRIPTORS *Disabilities; Elementary Secondary Education; Emotional Disturbances; *Exceptional Child Research; Infants; Longitudinal Studies; Management Information Systems; Preschool Education; *Program Effectiveness; *Program Evaluation; *Special Education; Student Evaluation; Transitional Programs
IDENTIFIERS *Dallas Independent School District TX; Education for All Handicapped Children Act; Project KIDS; Project SEED

ABSTRACT

The manual presents a composite of final reports of seven special education research and evaluation studies undertaken by the Dallas Independent School District in 1980-81. Each report contains information on program objectives, sampling, design, and outcomes. Topics covered include the development of a special education computerized information system; a context evaluation of the 1980-1982 special education program; a program review of selected provisions of Public Law 94-142 (the Education for All Handicapped Children Act); special education student participation in system wide testing; evaluation of the Structured Environment for the Emotionally Disturbed (SEED) project; process evaluation of the 1980-1981 Project KIDS (Kindling Individual Development Systems) outreach, a home to school transition program for families of handicapped infants, toddlers, and preschoolers; and longitudinal evaluation of education for handicapped infants. (CL)

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IN RETROSPECT 1980-81
SPECIAL EDUCATION RESEARCH

SPECIAL EDUCATION RESEARCH AND EVALUATION

DEPARTMENT OF RESEARCH AND EVALUATION
DALLAS INDEPENDENT SCHOOL DISTRICT

EC 143296

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DALLAS, TEXAS
DECEMBER 1981

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Importance of Research and Evaluation

We live in a time of accountability, a time when the public wants to know how their money is spent. Whether it be health, business, education, or government, the public is unwilling to support projects without knowing how well a program works and whether it is worth the financial investment.

Administrators, staff, and program participants often have differing views, and decision makers, as well as the public, have difficulty getting an unbiased picture of a program. However, information is needed in order to find effective ways of accomplishing program goals and of judging the worth of on-going procedures and innovative developments.

In recent time research and evaluation have become significant factors in program development, and good evaluation can assure the public and decision makers of access to the information necessary for responsible planning for future needs and for accountability in program organization and administration. Accordingly, the Dallas Independent School District has committed significant resources to research and evaluation in the District's special education program.

Forward

The District's special education program is based on the policies of the Dallas Independent School District and the Texas Education Agency and the provisions of Public Law 94-142. These mandate that every handicapped child shall have a free appropriate public education in the least restrictive environment and each child shall have an individualized education program.

About 10,000 students are served each year in special education, and these range in age from birth to twenty-two years and include a wide variety of handicapping conditions. The special education program offers instructional placement ranging from the regular classroom to special instruction for hospitalized students and special campus placement. The program staff includes about 900 personnel.

In Retrospect 1980-81 is a composite of final reports written for every special education research and evaluation study conducted during the 1980-81 school year. Each report contains comprehensive information and includes program objectives, sampling, design, and outcomes.

Special Education
Program Studies

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The 1980-81 Special Education Computerized Information System

SE81-113-81-08

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August 1981

The 1980-81 Special Education Computerized Information System

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Daniel J. Macy

Description of the Program

Objectives of the program. The Computerized Information System (CIS) consisted of the following three systems: (a) The Special Education Data Base, containing demographic data files on DISD special education students and faculty, (b) The Computerized Monitoring and Retrieval (CMR) System, used as a means to access and store appraisal/placement data when students enter the special education process, and (c) The Computerized On-Line Transportation (COLT) System, allowing storage and retrieval of information regarding special education transportation services. The basic function of the 1980-81 Special Education CIS was to build onto the existing computer systems while continuing to provide information to special education administrators. Variations of student and faculty rosters, current to the week of distribution, were given to special education coordinators, facilitators, diagnosticians, home/school coordinators, psychologists, and speech pathologists on a six-weeks basis.

A major objective of the CIS was the generation of reports, necessary for funding purposes, for the Texas Education Agency (TEA). The P. L. 94-142 Child Count reported the total number of children between ages 3-5 and ages 6-21 by handicapping condition. The Elementary

and Secondary School Civil Rights Survey tallied the total number of special education students by age, instructional arrangement and handicap. Finally, statistical tabulations essential for the Annual Special Education Statistical Report to the TEA were generated by a set of computer routines developed by CIS personnel.

The CIS was utilized also to provide information requested by management. The types of information requested usually dealt with totals and percentages of special education students in terms of ethnicity, subdistrict, age or handicap. Mailing labels were also computer-generated, which economized on secretarial time when letters were sent to staff or parents.

The CIS also provided on-line computer storage and retrieval of appraisal/placement events. Computer terminals, placed in subdistrict special education offices, enabled immediate access to student information such as dates of reviews, staffings, and medical exams. Finally, on-line capability to add or change information regarding special education transportation services was provided.

Purpose of the Evaluation. The Special Education Data Base applications began in 1975-76 to meet the increasing information needs of both special and regular education administrators. These needs arose from a host of administrative tasks and issues including budget and program planning, federal and state reporting requests, student enrollment and appraisal/placement monitoring, due process procedures, and the need for more precise and accountable management. During its sixth year of operation, the Computerized Information System continued to provide needed information to designated managers.

Methodology

Sample. The sample for the Special Education Data Base included the special education staff (N=785) and all students who received special education services (N=11,140) during 1980-81. The CMR System included students involved currently in the special education appraisal/placement process (N=8,461) during 1980-81. The COLT System was comprised of special education students who received county- or District-funded transportation services (N=2154) in 1980-81.

Instrumentation. The CIS project has involved no measurement instruments in the usual sense. Information was collected for the data base using Special Education Master Coding Forms, Speech Master Coding Forms, and Faculty Forms. A record of ad hoc data requests were documented on Ad Hoc Information Request Forms. Direct terminal entry, CMR Profile Forms, and Transportation Forms were used to supply data for the CMR and COLT Systems.

Evaluation design and data analysis. The information for the data base was gathered by speech pathologists (N=83) and case managers (N=73). The information collected by case managers, also known as diagnosticians, psychologists, and home/school coordinators, primarily consisted of student demographic data. The information was recorded on forms and sent to a central office on a weekly basis. When a student was added to a special education program, the student's name, identification number, school, classroom unit, handicap, and instructional arrangement were recorded. All variables, excluding the name, were written in an alpha or numeric code. The same method was used when a student was dropped or a change was made on the student's record. After the forms were validated, the data were keypunched and entered into the computer file.

The CMR data were entered through remote terminals by area administrative clerks (N=14). First, the data were sent to the area office on appraisal forms completed by the case managers.. The clerks input the data on the terminal after recording the information on Case Management Profile Forms.

Information for the COLT System was provided by coordinators and facilitators who sent transportation updates to the central administration building on a daily basis. Updates were entered directly through a remote terminal stationed in the special education office.

Major Evaluation Questions and Results

1. What information was contained in the CIS to meet the needs of special education management?

Basically, the CIS consisted of three systems which interacted with the District's System-wide Data Base, as illustrated in Figure 1. The Special Education Data Base was comprised of the student, faculty, and school files. The field descriptions for the three files are listed below.

Special Education Data Base

Student File

1. Student DISD identification number.
2. Student name.
3. Attending school location.
4. Teacher unit number or speech pathologist number.
5. Disposition code.
6. Instructional arrangement code.
7. Primary, secondary, and/or tertiary handicap code.
8. Student services number.
* 9. Home-school location code.
10. Speech problem type.
11. Speech handicap severity rating.
12. Number of speech sessions served.

*Data initially retrieved from the System-wide file.

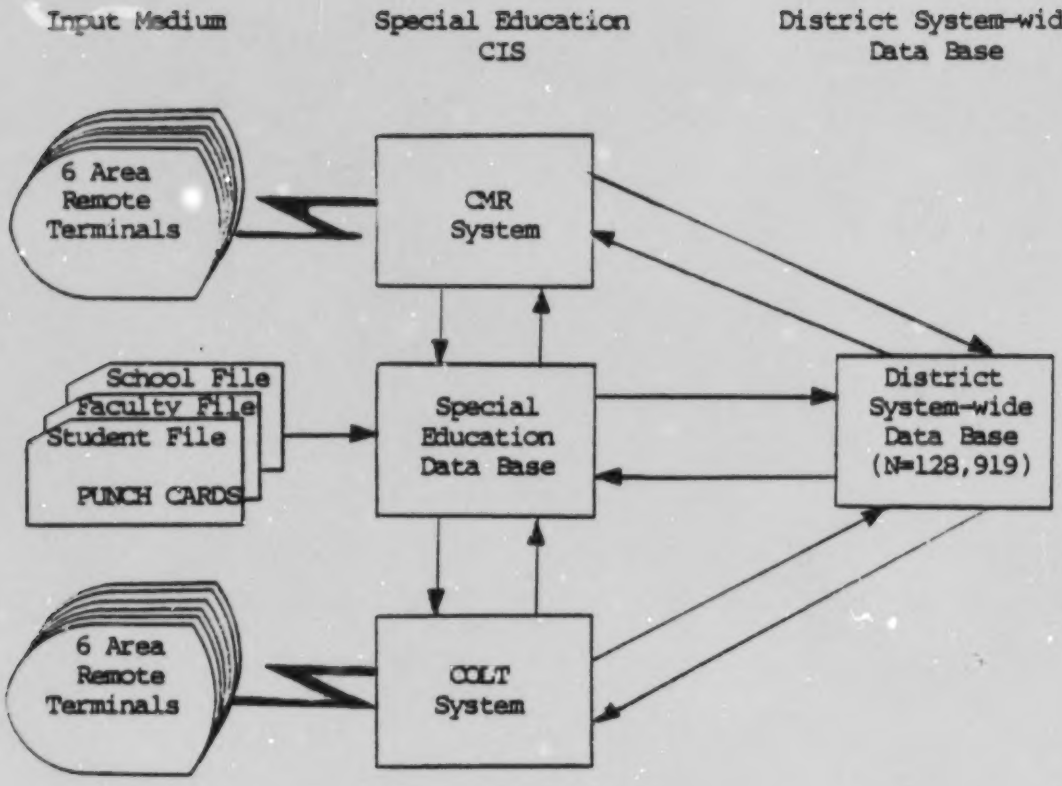

Figure 1: Special Education Computerized Information System

Special Education Data Base - (cont'd.)

Student File

13. Case manager number.
14. Special flags for students affiliated wih Project Zero Reject, Project KIDS, Project SPICY, Project SEED, the Multiple Careers Magnet Center, or the Assessment Center.
15. Special flags indicating students who are expectant mothers, receive special funding, or are severely profoundly handicapped.
16. Special flags for students in vocational educational programs.
17. Related services (i.e., occupational therapy or physical therapy).
*18. Home address.
*19. Phone number.
*20. Grade.
*21. Date of birth.
*22. Sex.
*23. Ethnicity.

Faculty File

1. Area location code.
2. Position type code (i.e., psychologist, teacher, etc.).
3. Faculty identification number.
4. School location code.
5. Supervisor identification number.
6. Diagnostician identification number.
7. School grade span.
8. Organizational arrangement code (i.e., DISD or non-DISD campus).
9. Service type code (i.e., resource room, self-contained unit, etc.).
10. Itinerant location codes.

*Data initially retrieved from the System-wide file.

School File

1. School TEA budget number.
2. School name.
3. Area location code.
4. School box number.
5. School grade span.

The information on the CMR System contained the following:

Computerized Monitoring and Retreival System

1. Student DISD identification number.
2. Student name.
3. Case manager code.
4. Student services number.
5. Reporting school.
6. Referral source.
7. Dates for PPC (Pupil Personnel Committee) documentation and completion.
8. Date for parent permission of assessment.
9. Date for scheduled assessment.
10. Examination dates (i.e., vision, auditory, psychological, educational, physical, and sociological exams).
11. Dates for scheduled and completion of staffing.
12. Indication of parent's attendance at staffing.
13. Results of staffing (e.g., Was the student eligible for special education?).
14. Date of parental approval for service.
15. Location of service initiation.
16. Dates of area and central ARD (Admission, Review and Dismissal) reviews.
17. Results of reviews (e.g., Was ARD Committee in agreement?).
18. Dates of quarterly IEP (Individualized Educational Program) reviews.
19. Date and result of end-of-year review.

Finally, the data collected for the COLT System included the following:

Computerized On-Line Transportation System

1. Student DISD Identification number.
2. Student name.
*3. Pick-up address.
*4. Home phone number.
*5. Sex.
*6. Ethnicity.
*7. Date of birth
8. Student services number.
9. Transportation location.
10. Transportation funding source.

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*Retrieved from System-wide Data Base.

Computerized On-Line Transportation System - Cont'd.

11. Transportation status code (i.e., parent request, transportation started, or transportation stopped).
12. Bus route number.
13. Transportation eligibility reason (i.e., use of wheelchair, braces, etc.)
14. Indication of the necessity of a special lift.
15. Delivery address.
16. Work phone number.

2. What kinds of information were available to decision makers as a result of the 1980-81 CIS operations?

Table 1 categorizes the frequency and types of reports generated on a routine basis. Faculty, student, and transportation rosters were generated every six weeks. Summary statistics on the CMR System were generated every month. Information was reported annually to TEA, and data necessary for the scheduling process were printed also on an annual basis.

Information from the CIS was requested on an ad hoc basis on 162 different occasions during 1980-81. The number of ad hoc requests increased by 14% when compared with the 1979-1980 requests (N=142). Table 2 categorizes the frequency and types of data requested by management. The time needed to complete a request ranged from fifteen minutes to four days. The average response time for a request was 2.10 hours.

Professionals needing information from the CIS ranged from assistant superintendents to subdistrict administrative clerks. Table 3 delineates the number of times different personnel requested data. The number of ad hoc requests from central staff (N=66) increased by 20% when compared with 1979-1980 central staff requests (N=55). This group accounted for almost half of the ad hoc requests

Table 1

Types and Frequencies of Routine Data
Reported from the Computerized Information System

Type of Report	Schedule for Generation
CMR Summary Statistics	Monthly
Faculty rosters	6 weeks
Student rosters	6 weeks
Transportation rosters	6 weeks
Child Find Report	Quarterly
Elementary and Secondary School Civil Rights Survey	Annually (October)
P. L. 94-142 Child Count	Annually (December)
Annual Special Education Statistical Report to the TEA	Annually (June)
Letters of notification to parents about special class placement and transportation authorization, if applicable	Annually (June)
Computer punch cards of students necessary for class scheduling process	Annually (June)

Table 2

Types and Frequencies of Data
Requested from the Computerized Information System
on an Ad Hoc Basis

Types of Information	Number of Times Requested	
	N	%
Tabulations by handicap, sex, ethnicity, age, grade, school, disposition or unit type	38	23.5%
Mailing labels of faculty and/or students	26	16.0%
Routine student/faculty rosters at less than 6-weeks intervals	14	8.6%
SPSS (Statistical Package for the Social Sciences) frequency tables (e.g., handicap by grade)	11	6.8%
Student rosters by class or subdistrict	11	6.8%
Student address rosters	11	6.8%
Student rosters by instructional unit type (e.g., Early Childhood Unit)	9	5.5%
Rosters or tabulations of students receiving transportation	8	5.0%
Rosters or tabulations of historical data	7	4.3%
Additional TEA reports	4	2.5%
Tabulations of CMR data or related services information	4	2.5%
Student rosters by age, handicap, or instructional arrangement	3	1.9%
Summary rosters of speech students	2	1.2%
Projection estimates	2	1.2%
Student rosters listed by student services number or ID number	1	0.6%
Miscellaneous reports or tabulations	11	6.8%
Total	162	100.0%

Table 3

Professionals Requesting Data on an Ad Hoc Basis
from the Computerized Information System

Professional Service Type	Number of Data Requests	
	N	%
Central staff (i.e., Assistant Superintendents, Deputy Associate Superintendents, Directors, Assistant Directors)	66	40.7%
Research and evaluation staff	32	19.7%
Special education facilitators	21	12.9%
Special education coordinators	12	7.4%
Administrative clerks	8	4.9%
Special education secretaries	4	3.0%
Speech pathologists	3	1.8%
Home/school coordinators	3	1.8%
School personnel (i.e., registrar, counselor, dean of instruction)	3	1.8%
Educational diagnosticians	2	1.2%
School psychologists	2	1.2%
Data services personnel	2	1.2%
Special education teachers	1	0.6%
Occupational/Physical therapists	1	0.6%
Outside agency	1	0.6%
DISD School Attorney	1	0.6%
Total	162	100.0%

during 1980-81. There was a 30% decrease in the number of requests by the Research and Evaluation staff from 1979-1980 (N=42) to 1980-81 (N=32). Another comparison of 1980-81 to 1979-1980 revealed that a greater range of people requested data. The 1980-81 school year marked the first year of requests by home/school coordinators, psychologists, and school personnel such as registrars and counselors.

3. How was the information in the CIS utilized to meet the needs of special education management?

Utilization of CIS information included several major areas: class scheduling, enrollment projections, ad hoc information requests, and on-going information retrieval. The following summarizes CIS utilization in each of these areas during 1980-81.

A computerized method of class scheduling for the 1981-82 school year was implemented in the summer months. The method, which minimized the work time of special education management considerably, was executed with the close cooperation of the coordinators.

A set of programs was updated from 1979-1980 to project next-year school locations for special education students based upon their neighborhood elementary schools and the District-wide school feeder system. The enrollment projections were designed to help management allocate class units relative to anticipated student enrollments in the annual budgeting process of the District.

Subdistrict personnel were able to access current information on computer terminals placed in the area offices. Two programs, Tabulator and Inquiry, were specifically designed for users with minimal data processing background. These programs provided accurate and current statistical and demographic information on the special education population.

The additional functions of and revisions to the 1980-81 CIS were:

1. Collection of related services and vocational information by case managers on an on-going basis.

2. Collection of data on expectant mothers on an on-going basis.

3. Generation of new software necessary for:

    a. The Computerized On-Line Transportation System.
    b. The Computerized Monitoring and Retrieval System.
    c. The student directory roster.
    d. The Extractor and Tabulator programs.

4. Addition of the multiple updating feature on the CMR System which allowed all subdistricts simultaneous updating of the System.

4. How accurate was the information collected for the Special Education Data Base?

During the week of February 9, a validity survey of the student data base portion of the special education CIS was conducted. This survey included a random sample of seven case managers from each subdistrict. A special education teacher was then selected in each of the sampled case manager's cluster of responsibility. The survey included 35 classes which were classified as follows:

	Number of Classes
Self-contained classes	12
Resource rooms	9
Early childhood classes	3
Affective learning classes	3
Vocational adjustment classes	3
Pre-vocational skills classes	2
Developmental center	1
Total communication class	1
Daily living skills class	1
Total	35

Each teacher was contacted by telephone and asked if the students listed on the computer roster were receiving special education services in their classroom. If any adds or drops occurred within the previous two weeks, they were not considered as errors due to the usual two week buffer period between the time data were collected and reported on the computer file.

Table 4 reports results for the current survey as well as results from the previous two years. As noted above, any student adds or drops which occurred within two weeks of the survey were not tabulated as errors. Inspection of Table 4 shows that the overall error rate (including both drops and adds) was 8.7%. This was slightly increased over the total error rate (7.9%) found in March 1980, and this rate represented an upward trend in total error across the past three years, as summarized below:

	Total Error Rate
March 1979	7.6%
March 1980	7.9%
February 1981	8.7%

Table 4 also indicates that there were two major sources of error. One was the student who should have been added to a teacher's roster, and the other was the student who should have been dropped from a roster. The former error (i.e., student adds) was considered more serious since it represented a potential loss in special education monies. Table 4 shows that this error rate was 5.0% in the current survey, and more importantly, this rate has increased rather significantly since March 1979. The following

Table 4

Three-Year Comparison on
Accuracy of CIS Student Data Base Information

	1978-79				1979-80				1980-81	
	December		March		December		March		February	
	N	% error[a]	N	% error	N	% error	N	% error	N	% error
Teachers Contacted:	33	---	60	---	34	---	34	---	35	---
Total student population listed on data base for surveyed classes	344	---	710	---	371	---	429	---	356	---
Total number of students that teachers reported should be added	22	6.4%	15	2.1%	18	4.8%	18	4.2%	18	5.0%
Total number of students that teachers reported should be dropped	23	6.6%	39	5.5%	14	3.8%	16	3.7%	13	3.7%
Total Errors	43	12.5%	54	7.5%	32	8.6%	34	7.9%	31	8.7%

[a]Percent error is computed by dividing number of errors by number of students sampled. Error computation allowed two-week buffer interval for the reporting time between the case manager and actual computer update.

summarizes the student add error rate:

	Student Add Error Rate
March 1979	2.1%
March 1980	4.2%
February 1981	5.0%

One potential explanation for increased error rates in 1981 could have been the conducting of the survey in February as opposed to March, as was done in 1980. It was possible that reporting by case managers was in "better shape" in March 1980 than February 1981, but this probably was not a significant factor. A second explanation could have been simple sampling variation, since different samples of teachers were drawn each year. However, the direction and consistency of the trend in error rate changes strongly suggested that accuracy of the information in the CIS was, in fact, decreasing.

5. What were the costs associated with the operation of the CIS?

The cost of CIS operations was ascertained by dividing the system into six major functions and charting the hour costs utilized to perform each. Table 5 indicates the total number of days spent on each CIS function given two computer programmers, one assistant evaluator, one principal evaluator, one secretary, and one data technician. Assignment of cost to each function was achieved by totalling each employee's daily salary multiplied by the number of days utilized for each function.

Table 5

Computerized Information System
Cost Analysis[a]

CIS Function	Total Days Utilized by Staff	Total Cost	Percent Total Cost
New software development[b]	257	$28,893.20	40.4%
Data collection	162	$13,781.50	19.3%
System maintenance	66	$ 9,143.10	12.8%
Special projects[c]	80	$ 8,558.70	12.0%
Routine report generation	59	$ 6,084.60	8.5%
Ad hoc report generation	46	$ 4,983.90	7.0%
Total	670	$71,445.00	100.0%

[a]Cost figures do not include computer time.

[b]New software was developed for the COLT System, CMR System, and for data base improvements.

[c]Special projects included the class scheduling process, the development of an enrollment projection system, and the study of standardized test scores of special students.

Keypunch and computer time costs were not included in Table 5, but the cost incurred for keypunching totaled $1,502.48. A previously reported analysis of the costs of data processing revealed that, at least in a large school district which has computer capability, the costs for computer-prepared individual reports were less than those costs for reports which were manually prepared (Raisman, Holt, Kocsis, and Macy, 1979, p.6).

When compared with the 1979-1980 cost analysis, more time and money were devoted to software development, data collection, and system maintenance in 1980-81, while less time was utilized for routine report generation and special projects. Specifically, resources allocated for software development doubled in 1980-81 due to revisions to the CMR System and implementation of the COLT System. Adding the multiple update feature to the CMR, allowing all subdistricts simultaneous updating to the system, required thirty days of programmer time. More resources were allotted for data collection and system maintenance because of CIS expansion. Specifically, the three systems (CMR, COLT, and data base) were updated and maintained on a continual basis, whereas, in the past, only the data base was in full-time operation.

6. What is the status of the CMR System in terms of implementation and utilization?

The CMR System evolved out of special education management's need for current student appraisal information. During 1979-1980, all special education records were moved from the administration building to subdistrict offices. An integral part of this decentralizing process was to have data readily accessible on area terminals.

The planning phase for the CMR System has spanned several years, and a design proposed during the 1977-78 year specified seven remote terminals. However, budget limitations precluded further development until 1979-1980. In January 1980 seven cathode ray terminals and couplers were purchased, along with three portable data terminals.

The pilot implementation of the CMR System began with the Southeast Subdistrict in January 1980. Before placing the terminal in the area office, data from the CMR forms were entered on the computer by data base personnel. After a training session, administrative clerks updated and accessed information directly on the terminal. Each subdistrict received a terminal following a staggered implementation schedule. A terminal was placed in an office after the system was functioning in a previous subdistrict. In addition, terminals were placed in the Blind/Visual program office, and the Special Funds Acquisition and Monitoring office, and the Special Education office located at the central administration building.

In 1980-81 the CMR System was functioning in all subdistricts. However, several problems occurred which were later resolved. These included:

1. Problem: Resource allocations. Several subdistrict offices did not have direct telephone lines or two wall plugs (one outlet box) to connect with the terminal. These offices had changed location from the prior year.

   Solution: The items were requisitioned and received.

2. Problem: Slow data collection. Appraisal forms, with CMR data, were not sent to the offices on a current, continual basis.

   Solution: Case managers (who were responsible for these forms) were added to the CMR data record. Therefore, since they had an integral role in the CMR Sytem, forms seemed to be processed on a more regular basis.

3. Problem: Computer Access. Initially, only one subdistrict could update CMR information at any given time which necessitated the use of a time schedule, causing some friction among the five offices.

Solution: New software was developed which allowed all subdistricts simultaneous updating to the System, proving more accommodating to the clerks' work schedules.

Summary statistics of CMR data were generated by subdistrict on a monthly basis for area management. Information was provided for three population groups on the CMR System: (a) Added case profiles for the current month, (b) Case profiles which had been modified during the current month, and (c) Added or modified case profiles processed from the beginning of the school year through the current month. For each of these three groups, a stair-step percentage table reported the number and percentage of events completed. Two other tables were included also showing percentage completion of medical appraisals and percentage completion of events related to the student staffing.

Overall, 8,461 student profiles were added or modified on the CMR System during 1980-81. The System was accessed 857 times by the 19 users. A wide variability was exhibited among the subdistrict offices in terms of CMR use. Each user had an assigned security code in order to keep the information confidential. While all users could access data, only specific personnel had security numbers which allowed updating. This procedure ensured that data manipulation would be restricted to selected personnel.

7. What contingency plans, if any, were developed for CIS expansion?

A reorganization of the Special Education component of the Research and Evaluation Department has been planned for 1981-82. Beginning in September 1981 the Special Education CIS will be

affected in the following ways. The assistant evaluator will become a planner for special education. The principal evaluator will continue to provide special education research as part of the Department of Research and Evaluation, but may not be directly involved with the CIS.

Despite the staff changes, central management intends for the CIS to continue functioning as in the past. Therefore, modifications planned for 1981-82 include the following:

1. Generation and dissemination of class rosters with student staffing dates on six-week intervals for the Health Services Department.

2. Documentation of all CIS program software.

3. Collection of data via terminal entry for the Computerized On-Line Transportation System on the subdistrict level.

References

Reisman, K., Holt, M., Kocsis, J., and Macy D. Special Education Data Base (SP79-415-31-08). Dallas, Texas: Dallas Independent School Distirct, Department of Research, Evaluation, and Information Systems, July 1979.

Additional Information

Reisman, K., Holt, M., Kocsis, J., and Macy, D. The 1979-80 Special Education Data Base (SE80-223-31-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, October 1980.

Reisman, K., Holt, M., Kocsis, J., and Macy, D. Special Education Data Base (SP79-415-31-08). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, July 1979.

Reisman, K., Holt, M., Kocsis, J., and Macy, D. Special Education Data Base, (SP78-106-31-08). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, July 1978.

Reisman, K., Holt, M., and Macy, D. Special Education Data Base (SE77-106-3-8). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, July 1977.

Macy, D., Carter, J., and Carpenter, D. Special Education Data Base (SP76-890-31-08). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, June 1976.

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CONTEXT EVALUATION OF THE 1980-81 SPECIAL EDUCATION PROGRAM

SE81-114-81-08

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Dallas, Texas
August 1981

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Context Evaluation of the 1980-81 Special Education Program

Evaluator: Daniel J. Macy

Description of the Program

Objectives of the Program. The Dallas Independent School District's special education program attempts to provide appropriate education for every exceptional child. Special education makes use of a continuum of instructional arrangements which range from complete regular classroom instruction to total self-contained instruction in a special campus setting. The program attempts to provide individualized instruction for each student.

Purpose of the Evaluation. The evaluation conducted was a limited context evaluation of the implementation and operation of the special education program. As such, the evaluation yielded only basic information about program operation. Limited comparisons were made with results from previous years.

Methodology

Sample. The sample included the total student population served in special education as reported in the Annual Statistical Report to the Texas Education Agency. Enrollment data for the total District came from the system-wide student data base at the end of the second semester of the year.

Evaluation Design. The evaluation used a simple one-shot observational design, and the time of data collection was June 15, 1981. The data source was the special education computerized data base which is maintained by special education staff and Research and Evaluation personnal.

Major Evaluation Questions and Results

1. How many students were served in special education?

   A total of 10,965 students were served in the special education program.

2. How did the number of students served compare to previous years and to national estimates of incidence?

   The number of students served in special education was 8.6% of the 1980-81 total District population (N=127,347) at the end of the second semester. Table 1 presents these data for the past six years.

Table 1

Number and Percent of Students
Served in Special Education
During Six Consecutive Years

Year	Number	Percent	Percent Adjusted[a]
1975-76	8,250	5.67	-
1976-77	8,051	5.78	5.53
1977-78	9,244	6.84	6.35
1978-79	10,238	7.70	7.04
1979-80	10,739	8.20	7.38
1980-81	10,965	8.61	7.54

[a]Computed for the 1975-76 total District enrollment of 145,503 students, since total District enrollment has decreased over the past five years.

The data reported in Table 1 indicate increasing enrollment in special education. This trend is encouraging since the percent served in 1975-76 was below the expected incidence levels. The Bureau of Education for the Handicapped in the former U. S. Office of Education estimated that a minimum of 10.04% of school-age children were handicapped, and Public Law 94-142 cited an incidence rate of 12%. However, survey data reported by the Council of Great City Schools indicated an average incidence rate of about 7% for handicapped children in large-city schools.

Comparison of the percent served to a standard incidence figure is important because it is one of the primary methods of ascertaining whether the District is providing a free, appropriate education to all handicapped students, as legally mandated by Public Law 94-142. When considering a student population as large as the District's, even one-half a percentage point involves several hundred students (e.g., 637, based on the 1980-81 enrollment). One unfortunate problem in attempting to evaluate the special education incidence rate in the District is the absence of any commonly accepted standard. Therefore, one can only compare the District's incidence rate to those rates previously mentioned and perhaps conclude that the District's special education program served the expected number of children.

Table 2 presents the number of special education students as well as the percent of the total subdistrict population served in special education during 1978-79, 1979-80, 1980-81. Inspection of Table 2 shows that in two subdistricts, East Oak Cliff and Southeast, the incidence rates were somewhat different than in the remainder of the District.

Table 2

Number and Percent of Students
Served in Special Education by Subdistrict
in 1978-79, and 1979-80, 1980-81[a]

Subdistrict	1978-79 N	1978-79 %	1979-80 N	1979-80 %	1980-81[b] N	1980-81[b] %
Northwest	2,019	6.9	2,118	7.4	2,073	7.4
Northeast	1,753	6.6	2,085	7.8	2,189	8.2
Southwest	1,964	7.1	2,074	7.3	2,167	7.6
East Oak Cliff	1,270	4.8	1,480	5.8	1,639	6.7
Southeast[c]	2,031	9.4	2,210	7.9[d]	1,877	8.8

[a]Totals served are less than those reported in Table 1 due to the exclusion of hospital/homebound, regional deaf, and special campus students.

[b] The October 1980 total Subdistrict population was used to compute these percentages.

[c]Includes Seagoville Subdistrict.

[d]This percent was reported previously and erroneously as 10.2%.

The data did not indicate if all eligible handicapped students were served in the District's special education program. If one accepts a 10% or 12% incidence rate, one could believe that many eligible children did not participate in special education. If so, the extent to which these chidren received a free, appropriate education (as mandated by Public Law 94-142) is not known. However, there is no generally accepted incidence rate.

2. How did the percent of ethnic representation in special education compare to total District ethnic percent?

The above question is critically important because historically many children from different racial groups have been placed inappropriately in special education (Hilliard, 1980). The best estimate of the expected representation of racial groups in special eudcation is the representation in the total population, since there is no a priori reason to expect any particular group to have a greater incidence of handicapping conditions.

Tables 3, 4, and 5 present these comparisons for six consecutive years from 1975-76 through 1980-81. These data show that ethnic representation was generally in agreement between both regular and special education student populations, but there was a tendency toward overrepresentation of White elementary students in special education across the five-year period. Similarly, there was a tendency toward underrepresentation of Hispanic, and to a lesser extent, Black elementary students in special education.

One should note that the pattern of ethnic representation observed in the elementary student population was different from that in the secondary population. There was a tendency toward overrepresentation of Black secondary students in special education during 1975-76 and 1976-77, but this overrepresentation became almost nonexistent by 1980-81 (see Table 4). The tendency toward underrepresentation of Hispanic secondary students was somewhat less than that of elementary students.

Table 3

Percent Ethnic Representation for Elementary Students in Special Education and the Total District During Five Consecutive Years[a]

Year	Population	Racial Group			
		Black	Hispanic	Other	White
1975-76	Total District	46	15	1	38
	Special Education	41	13	<1	46
1976-77	Total District	48	17	1	34
	Special Education	42	13	1	45
1977-78	Total District	49	18	1	32
	Special Education	43	14	1	42
1978-79	Total District	49	19	1	31
	Special Education	43	16	1	41
1979-80	Total District	49	21	1	29
	Special Education	44	16	1	39
1980-81	Total District	48	23	2	27
	Special Education	46	16	1	37

[a]Data from the first five years are from the evaluation reports listed in the Additional Information section of this report.

Table 4

Percent Ethnic Representation for Secondary Students in Special Education and the Total District During Five Consecutive Years[a]

Year	Population	Ethnicity			
		Black	Hispanic	Other	White
1975-76	Total District	44	10	1	45
	Special Education	51	8	1	41
1976-77	Total District	46	11	1	42
	Special Education	50	8	1	41
1977-78	Total District	47	12	1	40
	Special Education	49	9	1	41
1978-79	Total District	49	13	1	37
	Special Educaion	52	9	1	38
1979-80	Total District	50	14	1	35
	Special Education	53	10	<1	37
1980-81	Total District	52	15	1	32
	Special Education	54	12	1	33

[a]Data for the first four years are from the evaluation reports listed in the Additional Information section of this report.

Table 5

Percent Ethnic Representation for All Students in Special Education and the Total District During Five Consecutive Years[a]

Year	Population	Ethnicity			
		Black	Hispanic	Other	White
1975-76	Total District	45	13	1	41
	Special Education	45	11	<1	44
1976-77	Total District	47	14	1	38
	Special Education	45	11	1	43
1977-78	Total District	48	15	1	36
	Special Education	45	12	1	42
1978-79	Total District	49	16	1	33
	Special Education	46	13	1	40
1979-80	Total District	49	18	1	32
	Special Education	47	14	1	38
1980-81	Total District	50	19	2	29
	Special Education	49	15	1	35

[a]Data for the first four years are from evaluation reports listed in the Additional Information section of this report.

The ethnic representation for all students in the special education program was comparable to that of the total District (Table 5). The overrepresentation of Whites in special education was not as pronounced as for the elementary student population because of the counterbalancing effect of ethnic representation among secondary students.

4. What was the profile of the total special education population in terms of sex, grade, and primary handicap?

Tables 6 through 9 present profiles of the special education population in terms of the above variables. These tables include data for several consecutive years (1973-1981 or 1975-1981). Population totals may not agree across Tables 6 through 9 due to missing data for selected variables.

. Inspection of Table 6 shows that male students are overrepresented in special education, since the District population is only about 50% male, and the special education population is more than 60% male. The ratio of males to females in special education was stable across a five-year period, and the observed disproportionate representation of male students is not uncommon among special education programs. The above data do raise the question of possible sex discrimination in the referral and placement of students in special education, and further study is needed to determine the relationship between gender and incidence of handicapping conditions.

Table 7 indicates that about 60% of the special population was enrolled in grade six or under during each of the past six years.

Table 6

Percent Male and Female Representation
in the Special Education Population

Year	Sex		Total[a]
	Male	Female	
1975-76	63%	37%	8,250
1976-77	62	38	8,296
1977-78	64	36	9,244
1978-79	63	37	10,238
1979-80	64	36	10,739
1980-81	64	36	10,965

[a]Population totals may not agree with Tables 7, 8, and 9 due to missing data.

Table 7

Composition of Special Education Population
by Grade Level

Year	Grade				Total
	3 and under	4-6	7-8	9-12	
1975-76	37%	26%	14%	23%	7,706
1976-77	32	29	15	24	6,493
1977-78	40	26	14	20	8,721
1978-79	40	25	15	20	10,056
1979-80	38	25	15	22	10,568
1980-81	32	26	16	26	10,965

The large proportion of students served in grade three and under was due to speech and language handicaps in which intervention typically began in the first or second grade. Special education services should begin as early as possible in order to realize maximum benefits, and thus the proportion of students served in the early grades and prekindergarten level is important.

Table 8 presents data for special students in terms of primary handicapping condition for the three predominant handicap categories: mental retardation, learning disability, and speech. The data indicate that these handicaps typically account for about three-fourths of the special education enrollment. There is a downward trend in the proportion of the special population whose primary handicap is mental retardation, which may be due to increases in total special education enrollment. The dramatic change in the proportion of learning disabled students from 1977-78 to 1978-79 was due to the deletion of the minimal-brain-injured category by the Texas Education Agency. Many of these students were reclassified as learning disabled.

Table 9 presents the 1979-80 special education population by each handicap category. Results were consistent with expectations.

The special education program also provides special instruction for pregnant students, and Table 10 reports the number of students served in special education for the past seven years (1973-1980). These data indicate a trend toward increased enrollments in the special program for expectant mothers since 1977-78, which may lead to improved prenatal care and child-rearing practices.

Table 8

Composition of the Special Education Population by Primary Handicap

Year	Handicap				Total[b]
	Mental Retardation	Learning Disability	Speech	Other[a]	
1973-74	28%	19%	29%	24%	8,641
1974-75	25	22	29	24	8,375
1975-76	28	17	27	28	7,817
1976-77	25	14	32	29	7,688
1977-78	22	18	29	31	8,884
1978-79	21	30	29	20	9,809
1979-80	19	29	28	24	10,254
1980-81	18	33	24	25	10,553

[a]Includes handicaps in areas of vision, hearing, orthopedic, health, and emotion, and minimal brain injured prior to 1978-79.

[b]Totals do not agree with Table 1 due to exclusion of students served in the program for expectant mothers.

5. How many students were dismissed?

The total number of students dismissed from special education during 1980-81 was 2,318, which was 21.1% of the total served. Over the past five years, the percentages dismissed have been 21.6 (1976-77), 15.7 (1977-78), 17.6 (1978-79), 16.0 (1979-80), and 21.1 (1980-81).

Table 9

Composition of the 1980-81
Special Education Population by Primary Handicap

Handicap	Percent	N
Learning disabled	33.2	3,476
Speech impaired	24.5	2,570
Mentally retarded	18.6	1,950
Orthopedic, other health	6.9	725
Emotionally disturbed	6.1	636
Multihandicapped[a]	7.5	786
Hearing impaired	2.5	267
Visually impaired	0.7	67
Deaf/blind and autistic	0.0	3
Total	100.0	10,480[b]

[a]At least two handicapping conditions with the primary handicap other than mental retardation.

[b]The total is less than 10,965 due to exclusion of students seved in the program for expectant mothers.

Table 10

Number of Expectant Mothers Who Attended
Metropolitan Special

1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
552	451	433	363	360	429	485	485

References

Hilliard, A. G. Cultural diversity and special education. Exceptional Children, 1980, 46, 584-89.

Additional Information

Macy, D. J. Plan A Process Evaluation 1975-76 (SP76-886-31-08). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, August 1976.

Macy, D. J. Special Education Process Evaluation (SE77-066-3-8). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, August 1977.

Macy, D. J. Special Education Process Evaluation (SP78-066-31-08). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, August 1978.

Macy, D. J. Special Education Context Evaluation (SP79-413-31-08). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, August 1979.

Macy, D. J. Context evaluation of the 1979-80 special education program (SE80-114-81-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, October 1980.

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PROGRAM REVIEW OF SELECTED PROVISIONS OF PUBLIC LAW 94-142

SE81-120-81-05

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Dallas, Texas
July 1981

Program Review of Selected Provisions of Public Law 94-142

Evaluator: Daniel J. Macy

Description of the Program

Objectives of the program. Public Law 94-142, or the Education for All Handicapped Children Act of 1975, is the federal mandate for a free, appropriate public education for all handicapped children. The federal legislation is consistent with the Child Centered Educational Process specified in the Policies and Administrative Procedures for the Education of Handicapped Students of the Texas Education Agency. The District's special education program attempts to provide a free, appropriate education for every handicapped child in accordance with local, state and federal guidelines. The program review project is a multiple-year effort to develop quality standards for selected provisions of Public Law 94-142 and to evaluate the District's special education program in terms of these standards. The provisions selected include student evaluation procedures, appropriate placement, and the Individualized Education Program (IEP).

Purpose of the evaluation. Since 1980-81 was the first year of development for the program review process, the purpose of the evaluation was to report on the initial activities and to propose modifications for future development. The overall intent was to work toward improved credibility and utility of the data gathered in the review process.

Methodology

Sample. The sample selected for the first review effort included four elementary schools, which represented four subdistricts and five distinct instructional arrangements. The sample was as follows:

Subdistrict	School	Instructional Arrangement
Northwest	H. W. Longfellow	Resource room
Southeast	B. H. Macon	Developmental center
Northeast	Urban Park	Affective learning
Southwest	Stevens Park	Early childhood and total communication

The sample also included a distinct review team for each school. Each review team included the following people: a special education coordinator, a special education teacher, a parent of a handicapped child, an appraisal team member, and an elementary school principal. All program review team members were selected from neighboring subdistricts, and did not review within their own subdistrict.

Instrumentation. The instruments used in the review process were open-ended questionnaires developed by Ms. Alberta Rogers. These were two to four pages in length and were designed separately for separate members of the review teams. In other words, there was a questionnaire for the appraisal team member, one for the special education teacher, and so forth. The questions were based on the quality standards that had been developed for the overall review.

Evaluation design and data analysis. The basic strategy of the program review included two major activities. The first was the development of the quality standards, and the second was the initial program review pilot conducted in the four sampled schools. The author assumed no direct participation in these activities, and hence the evaluation represented a second-level analysis and review of development

activity. The evaluative method was to analyze the program review materials and to interview staff personnel.

Major Evaluation Questions and Results

1. What quality standards were developed for selected major provisions of P. L. 94-142?

More than 60 special education staff members worked on development of quality standards for fourteen instructional arrangements, and this initial development process spanned more than eight months. In September and October of 1980, approximately 65 special education teachers, nominated by other teachers, met for a two-day closed session to identify program standards.

The task given these teachers by Dr. Ruth Turner, Exceptional Children and Youth Services, was to identify the elements of a quality program. Consequently, the "standards" developed were not standards in the usual context of minimum acceptable levels of a given condition. Rather, the standards more nearly represented elements of an ideal program.

From November 1980 four staff members edited and compiled the listings of quality standards identified by the larger group of teachers. From December 1980 through February 1981 a central staff member further edited the standards in order to ensure that they complied with state and federal policy statements.

In April, Ms. Alberta Rogers and Dr. Ruth Turner pulled out the quality standards common to all instructional arrangements. The standards were put also into a standardized format. Ms. Rogers then met again with the teachers who originally identified standards in order to secure further review and refinement. This second review process took place individually for each of the fourteen

instructional arrangments and progressed through May. Therefore, only quality standards for the six instructional arrangements included in the sample were ready for pilot testing in April. The quality standards were reviewed also by the Special Education Parent Advisory Committee and special education staff coordinators. This input was included in the revision process.

There were two levels of quality standards developed for the review process. The first level was general and included standards common to the total special education program, regardless of the age or handicap of the child served. This general area included 107 standards grouped into three major areas: child identification; IEP (individualized educational program) and professional documentation; and administrative, instructional, consultative, and support personnel. Table 1 presents a tabulation of these standards by area and subarea.

There were six other major areas identified for quality standards development. These were: classroom organization and management, program and materials, behavior management, physical environment, parent/teacher conference, and transportation. However, all standards were not appropriate or equally applicable in these areas across all instructional arrangements. Therefore, a common set of standards was developed for each arrangement. Tables 2-6 report the tabulation of common standards according to areas and subareas.

A complete listing of the quality standards developed is available from the Special Education office, and inclusion of that list in this report would have been tedious, and costly. However,

Table 1

Tabulation of Common Standards Developed

	Area and Subareas	Subtotal	Total
I.	Child identification process		47
	Public awareness	3	
	Referral & screening procedures	9	
	Referral & screening committee	3	
	Case management system	1	
	Assessment procedures	9	
	ARD committee	22	
II.	IEP and other professional documentation		17
	IEP meeting procedures	1	
	IEP elements	9	
	IEP copy distribution	1	
	Goals & objectives	5	
	Forms availability	1	
III.	Administrative, Instructional, Consultative and Support Personnel		43
	Principal	7	
	Regular teacher	4	
	Special education teacher	6	
	Nurse	6	
	Occupational/physical therapist	5	
	Special education aide	4	
	Other	8	
	Volunteers	3	
Total			107

Table 2

Tabulation of Standards Developed for
Elementary Resource Room Classes

Area and Subareas	Subtotal	Total
I. Classroom organization & Management		11
Scheduling	4	
Grouping	2	
Reporting	2	
Class size	3	
II. Program & materials		7
III. Behavior management		6
IV. Physical environment		20
Facility	4	
Design	3	
Class furnishings	7	
Equipment	3	
Room temperature	1	
Room maintenance	2	
V. Transportation		8
Total		52

Table 3

Tabulation of Standards Developed
for Developmental Center Classes

Area and Subareas	Subtotal	Total
I. Classroom organization & management		13
Scheduling	5	
Grouping	3	
Reporting	3	
Class size	2	
II. Program & materials		36
Individualization	1	
Functionality	1	
Age appropriateness	1	
Assessment-based	1	
Instructional media	1	
IEP-specified equipment	1	
Style-based activities	1	
Style-based materials	1	
Living skills	1	
Testing materials	5	
Curricula	7	
Materials	15	
III. Physical environment		28
Facility	8	
Class furnishings	5	
Equipment	11	
Lighting	1	
Room temperature	1	
Room maintenance	2	
IV. Transportation		12
Total		89

Table 4

Tabulation of Standards Developed
for Affective Learning Classes

Area & Subareas	Subtotal	Total
I. Classroom organization & management		18
Scheduling	4	
Grouping	2	
Reporting	2	
Organization of physical setting	5	
Alternative classroom situations	4	
Class size	1	
II. Program and materials		8
III. Behavior management		17
IV. Physical environment		24
Facility	8	
Class furnishings	8	
Equipment	4	
Lighting	1	
Room temperature	1	
Room maintenance	2	
V. Transportation		14
Total		81

Table 5

Tabulation of Standards Developed
for Early Childhood Classes

Area and Subareas	Subtotal	Total
I. Classroom organization & management		31
Scheduling	4	
Grouping	2	
Reporting	6	
Organization of physical setting	6	
Classroom personnel	12	
Class size	1	
II. Program & materials		7
General materials	4	
IEP materials	1	
Planning of activities	1	
Use of materials	1	
III. Physical environment		23
Facility	9	
Class furnishings	9	
Equipment	1	
Lighting	1	
Room temperature	1	
Room maintenance	2	
IV. Transportation		8
Total		69

Table 6

Tabulation of Standards Developed
for Early Childhood Classes

Area and Subareas	Subtotal	Total
I. Clasroom organization & management		31
Scheduling	7	
Grouping	3	
Reporting	2	
Class size	1	
Classroom personnel	12	
Physical structure and organization	1	
Room arrangement	5	
II. Program & materials		11
Media & materials	1	
Suggested materials	3	
IEP	1	
Style-based activities	1	
Style-based materials	1	
IEP-based materials	1	
Ethnic allowances	1	
Daily living skills	1	
Testing materials	1	
III. Behavior management		13
IV. Parent/teacher conference		11
Frequency	1	
Record of contacts	6	
Information sharing	1	
Consistent treatment	1	
Home visits	1	
Compensatory time	1	
V. Physical environment		23
Facility	4	
Class furnishings	11	
Equipment	4	
Lighting	1	
Room temperature	1	
Room maintenance	2	
VI Transportation		8
Total		97

Table 7 presents an abridged list which gives one example standard for each of the three areas from the common core of standards, and Table 8 gives examples from the six areas of standards adapted to each instructional arrangment.

2. What measurement instruments/strategies were developed for standards data collection?

The strategy devised for pilot testing the review process was an on-site review by a multidisciplinary team. There were four review teams composed of the following personnel: special education coordinator, appraisal team member, classroom teacher, parent, and school principal.

A separate questionnaire was devised for each team member. The questionnaires were two to four pages in length and typically contained twelve open-ended questions. Questionnaires represented from 10 to 26 standards, depending on the particular professional position.

Special education coordinators and appraisal team members received an orientation session about the mechanics of the site visit. The suggested schedule for the visit was as follows:

9:00 - 9:30 a.m.	General conference with the school principal
9:30-10:00 a.m.	Individual review activities: Parent interviews principal. Appraisal team member and coordinator review files. Administrator tours facility. Teacher observes classroom.
10:00-10:30 a.m.	Individual review activities: Parent and coordinator observe classroom Teacher continues classroom observation Administrator interviews principal Appraisal team member continues file review
10:30-11:00 a.m.	General reconvening. Clarification of unanswered questions.

Table 7

Example Standards Common
to the Special Education Program

Area	Subarea	Standard	Reference Number
Child identification	Public awareness	The school has information available on how to refer children.	I.A.2.
IEP and other professional documentation	Goals and obectives	Goals, as written, are helpful to the teacher and to the parent.	II.D.2.
Personnel	Special education aides	Aides are only used to assist and to work with handicapped students in the building.	III.F.1.

Table 8

Example Standards Adapted
to Instructional Arrangements

Instructional Arrangement	Area	Subarea	Standard	Reference Number
Affective learning	Program and materials	(none)	The program provides opportunities for mainstreaming.	V.H.
Elementary resource room	Physical environment	Design	Individual study areas or learning stations are available.	VII.B.2.
Early childhood	Classroom organization and management	Reporting	There are detailed lesson plans for each child.	IV.D.1.
Developmental center	Transportation services	(none)	Bus riding time is reasonable for students.	VII.B.
Total communication	Parent/teacher conference	Parent	The teacher keeps a record of parent visits to the school.	VII.B.3.

The coordinator chaired the site review team and was responsible for training other team members and coordinating the actual review with the local school.

3. What was the reliability and validity of the data collection procedures?

Feedback solicited by telephone from six review team members indicated that the data collection was reliable and valid. When asked if their observations were representative of the total school program, they replied yes. However, several factors in the pilot testing raised questions about the level of reliability and validity in the data collection.

The first factor was the extent of training provided the review teams. Only the special education coordinator and appraisal team members were known to have received any formal orientation, and this was of brief duration. Review teams undoubtedly learned a great deal about collecting on-site observations during this first pilot test, and one would expect refinement in observation procedures on subsequent visitations. This presumably would improve reliability.

A second factor was the open-ended nature of the data collection questionnaire. This format permits considerable variability in responses and is subject to several extraneous factors such as time of day and available writing surface. For example, responses of team members with clipboards could have been different from those without clipboards. Also, responses to open-ended questions answered early in the day could have been longer and more detailed than those answered later because of fatigue.

A third factor was the agenda and observation procedures adopted at the local school site. While there was some need for flexibility in the on-site procedures, gross deviations could yield distorted information. Feedback from team members indicated that in one sampled school, the local principal was absent, and the whole process consisted of the review team sitting together and interviewing one special education teacher. This procedure presumably yielded different information than that yielded by the recommended agenda.

A fourth factor was the degree of correspondence between the quality standards and the questions contained in data collection questionnaires. Table 9 shows that questionnaires used by review team members included a total of 61 questions, and these represented almost 90 standards. However, 21 of the 61 questions represented more than one quality standard, and in a few cases a single question represented up to eight quality standards. Therefore, the data collection process sometimes confounded responses across standards, and made it more difficult to determine the level of achievement on a given quality standard.

A fifth factor inhibiting reliability and validity was the lack of precision built into the statements of the quality standards. Review of the example standard reported in Tables 7 and 8 easily shows the dilemma involved in determining compliance with or achievement on most or perhaps all of the standards. Consider the second example standard from Table 7, "Goals, as written, are helpful to the teacher and to the parent." What does helpful mean? Should goals be equally helpful or helpful in the same ways to both teachers and parents? Consider the fourth example standard in

Table 9

Tabulation of Questions and Standards
in Data Collection Questionnaires

Review Team Member	Number		Single Standard Questions
	Questions	Standards	
Appraisal person	11	13	9
Parent	14	22	9
Coordinator	9	11	7
Classroom teacher	13	26	6
Administrator	14	25	10
Total	61	97[a]	41

[a]Approximately ten standards were repeated across team members.

Table 8, "Bus riding time is reasonable for students." What is reasonable? It would seem that reasonableness might vary across children, depending on age, handicap, and so forth. Does riding time mean sitting in the bus, or does it mean when the bus is moving? Similar questions could be raised for nearly all, or perhaps all, of the standards developed.

4. What revisions were suggested by the program review pilot testing?

The review pilot testing was apparently useful, since it suggested a need for several important revisions and refinements. The reader should bear in mind that the program review process was just beginning, and the need for a number of modifications was to have been expected. Perhaps the strongest feature of the review to date was the comprehensiveness of the quality standards developed, and there was no indication of any immmediate need to expand the set of standards to embrace other areas or program dimensions.

There is a need for management to arrive at a clear understanding of the nature of a standard. Orientation materials used two terms to describe the developed standards. The first was 'elements of quality special education programs,' and the second was 'quality standards.' These terms are certainly related but do not appear to be logically equivalent. The first seems to imply that a program has a priori quality status and that elements are things one would find in such a quality program. The second term, "quality standards," seems to imply that the program does not yet have quality status and that the standards form the basis for its achieving quality status.

The data collection process in the pilot review also seemed to reflect this ambiguity. On the one hand, statements of quality standards were developed, which implied a mechanism for judging quality status, but on the other hand, data collection questionnaires appeared to look for the presence of elements of a quality program.

The term standard is understood commonly to mean a minimum acceptable level of a certain condition. Hence, standards are used to pass judgment on a minimum acceptable level, and a program must pass all standards prior to acceptance. The notion of quality, built into the program review standards, certainly implies a range or continuum of acceptability, and this feature should be developed and clarified in future work.

The first suggested step is for managment to develop a precise statement on the meaning and understanding of standards or elements, or wnichever that form the basis for the program review. The second, and equally important step, is the refinement of the statements of quality standards (or elements of a quality program) such that these contain sufficient precision for a reviewer to pass reliable and valid judgment. If the intent is to include a range of acceptability or quality within the process, then criteria defining that range must also be equally precise.

The second suggested revision is to build data collection instruments in which questions have a one-to-one correspondence to the standards or elements. Questions should not represent more than one standard. In fact, if suggested step one is done successfully, the data collection instruments will be 90% complete as an incidental outcome of the refinement process.

The third suggested step is to develop a standardized process for conducting the program review. If the on-site review warrants investment of resources, it ought to be done well, and there are conditions under which the review should not be done. Feedback from the six reviewers contacted indicated a belief that the pilot review was worth the effort, if the process were to be refined and continued next year. Standardized and enforced review procedures are a reasonable way to ensure the conducting of cost-effective on-site reviews.

The final and most important recommendation is that a written plan be devloped for revising the program review process. The program review is a gigantic undertaking and likely will not succeed without a systematic and detailed plan for improvement. In addition to responding to and improving upon the recommendations of this reviewer, the plan should include two major phases. The first should focus on the statements of standards (or elements), and the second should focus on the mechanics of further pilot reviews.

Special Projects

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SPECIAL EDUCATION STUDENT PARTICIPATION IN SYSTEM-WIDE TESTING

SE81-121-81-05

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April 1981

Special Education Student Participation in System-wide Testing

Evaluators: Daniel J. Macy, Jenci J. Kocsis

This report deals with the extent of participation of special education students in the District's standardized testing program. Accordingly, the study involved two major District programs, System-wide Testing (SWT) and Special Education.

Description of Programs

The System-wide Testing Program (SWT) consisted of norm-referenced, minimum competency, and criterion-referenced tests. Included with these instructional tests was the Texas Assessment of Basic Skills (TABS) which, according to Texas Education Code (TEC), must be administered to all eligible students in grades 3, 5, and 9. In addition, all ninth-grade students who did not meet mastery on the 1979-80 TABS "shall be given the opportunity to retake the assessment instrument each year the assessment instrument is administered" (TEC Section 16.176).

The District's Board policy relative to minimum competency requirements indicates that, beginning with the graduating class of 1983, all eligible students must pass a functional literacy course in order to graduate and receive a high school diploma. Students pass the functional literacy course by correctly answering 70% of the total items on the Basic Objectives Assessment Tests (BOAT), Level 8-12. Beginning in the eighth grade, the BOAT is administered yearly to each student who has not achieved the passing criterion of 70%. It is also consistent with Board policy that beginning with the class of 1981, students who pass the BOAT will receive diplomas with such certification.

The norm-referenced tests are mandatory for all eligible students enrolled in kindergarten and grades 1 through 11; these tests are administered in the spring of each school year. Norm-referenced tests serve as means for identifying instructional needs and for providing required accountability. These tests include the Metropolitan Readiness Tests for kindergarten and the Primary Battery or the Levels Edition of the Iowa Tests of Basic Skills (ITBS) for grades one through eight. The Tests of Achievement and Proficiency (TAP) are given in grades nine through eleven.

The Dallas Independent School District's Special Education Program attempts to provide appropriate education for every exceptional child. The special education program makes use of a continuum of instructional arrangements which range from complete regular classroom instruction to total self-contained instruction in a special campus setting. The program attempts to provide individualized instruction for each student.

The administrative philosophy of the special education program is that special education students in a local school building are an integral part of the total student population. Budget planning, textbook requests, space needs identification and other routine management activities must consider the needs of special education students as well as nonhandicapped students. At the local campus level, the implementation of the special education program is intended to function through the same administrative channels as any other campus program.

Purpose of the Study

The purpose of this study was to investigate the extent of participation by special education students in the District's testing

program. This information is extremely important for several reasons. The first is that many special education students do not possess the skills or sensory capabilities to respond to a group-administered paper-and-pencil test without some special adaptations in the testing procedures. Many other special education students do not have sufficient intellectual development to respond to the level of test administered. For many of these students, a paper-and-pencil testing experience likely would be unpleasant or possibly even harmful, and test scores yielded by these students would have had little or no utility. There are, however, many special education students whose intellectual development, skills, and sensory capabilities are adequate for participation in the testing program. Scores from such students would be meaningful, and test participation by such students carries potential benefit for both students and teachers.

A second reason for the importance of the study is the need for both diagnostic and progress data for special education students. Individualized Educational Programs (IEPs) specify objectives and procedures for evaluating progress and, hence, are the primary vehicle for instructional accountability in the special education program. In a similar vein, the SWT program is the primary vehicle for instructional accountability in the District's regular education program, and test scores from SWT may have potential IEP application. Additionally, local campus Pupil Personnel Committees typically draw upon SWT scores in order to evaluate achievement when considering referral of students to the special education program. Consequently, there is a need to investigate the value of these scores.

A third reason for the importance of the study comes from efforts to refine and develop further District policy regarding participation of

special education students in the SWT program. Previous guidelines lacked specificity and did not rest on a broad base of support. Decision makers had initiated procedures to develop improved policy, and results from the current study are highly relevant to the policy development process.

Methodology

Sample. The sample for the study included all students who were enrolled in special education during 1979-80 and who were tested with the ITBS or TAP, BOAT, and TABS. The procedure used in selecting the sample was to match the end-of-year special education student file with the SWT computer files. Any student whose name and ID number matched on the two computer files was included in the sample. Therefore, the study did not determine a precise unduplicated count of the number of special education students tested. This was because the BOAT and TABS duplicated grades tested with the ITBS and TAP. Furthermore, some students may not have been enrolled in special education at the time of testing, since the BOAT and TABS testing took place in January and February. Table 1 reports the sample size for each test.

Instrumentation. The study did not require any special test administration, but made use of the ITBS, TAP, BOAT, and TABS scores collected in the 1979-80 SWT program. The study investigated only total test composite scores and did not consider subtest scores.

Evaluation design and data analysis. The design of the study was descriptive, and it sought to provide contextual information for decision makers. Data analysis involved tabulation of special education students who participated in the SWT program, and determination of the number of such students whose test scores were below a chance performance level.

Table 1

Sample Size for Each Test

Test	Grades Tested	Total Number of Special Education Students	Total Special Students Less Speech Students[a]
ITBS	1 - 8	4,025	1,806
TAP	9 - 11	412	357
BOAT	3, 6	1,091	580
BOAT	8 - 12	765	667
TABS	5, 9	437	302

[a]The total number of special education students tested excluding those students whose only handicap was speech.

Major Evaluation Questions and Results

1. How many special education students participated in the System-wide Testing program?

Table 2 reports the number of special education students tested with the ITBS in grades 1-8 and the BOAT in grades 9-12. This table excludes BOAT testing in grades 3, 6, and 8 in order to avoid duplication. The total tested was 4,479 or 42% of the total end-of-year special education enrollment. However, one should note that an unknown number of those students were likely not enrolled in special education at the actual time of testing, since students enroll throughout the year.

Table 3 shows the number of special education students tested in terms of primary handicap and each test. These data show that the primary handicaps of speech and specific learning disability (SLD) accounted for the vast majority of students tested: 87% ITBS, 61% TAP, 73% BOAT, and 76% TABS. The information in Table 3 also shows that a number of students in almost all handicap categories participated in the testing program.

2. What were the District guidelines for participation of special education students in the System wide Testing program?

In 1979-80 the basic guideline regarding participation of special education students in the SWT program was that any student who spent more than two hours each day in a special class was excluded from testing. If further specifications about the testing of a special student were needed, the local campus test coordinator was referred to the student's Admission, Review, and Dismissal (ARD) Committee.

Even cursory examination of this testing guideline indicates that it is limited and that there is likely a need for a more comprehensive guideline. The two-hour limitation would have provided only gross

Table 2

Number of Special Education Students who Participated in ITBS or BOAT Testing[a]

Grade	ITBS	BOAT	Total Special Education Population	Percent Total Special Education Population
1	795		1,015	78%
2	759		1,183	64%
3	633		1,084	58%
4	473		950	50%
5	415		883	47%
6	396		836	47%
7	297		735	40%
8	257		837	31%
9		223	708	31%
10		139	703	20%
11		84	514	16%
12		8	495	2%
Total	4,025	454	10,738	42%

[a]Tabulation excludes children tested with the BOAT in grades 3, 6, and 8 in order to avoid duplication with the ITBS.

Table 3

Number of Special Education Students
Tested by Handicap

Handicap	ITBS		TAP		BOAT		TABS	
	N	%	N	%	N	%	N	%
Vision	30	1	11	3	17	1	5	1
Hearing	30	1	11	3	4	1	4	1
Orthopedic	24	1	7	2	17	1	7	2
Health Impaired	155	4	19	5	74	4	23	6
EMR	197	5	54	13	165	9	33	8
TMR	5	1	0	0	11	1	1	1
ED	62	2	10	2	49	3	10	2
SLD	1,290	32	199	48	750	40	196	45
Speech	2,219	55	55	13	609	33	135	31
Pregnant	13	71	46	11	149	8	26	6
Autism	0	0	0	0	0	0	0	0

[a]EMR - educable mentally retarded, TMR - trainable mentally retarded, ED - emotionally disturbed, SLD - specific learning disability.

identification of students whose handicaps prohibited or impaired profitable test participation. Futhermore, the guideline placed considerable responsibility for determining the need for test adaptations on the local campus test coordinator.

During 1980-81, revised guidelines were set in place by SWT. These guidelines exempted all special education students except those who received both mathematics and reading/language arts in regular classrooms, who received only speech therapy, or who were pregnant. Students in process for placement for special education were exempted also.

The above guides were developed essentially as interim policies by SWT and were not the product of any formal, District policy development process. During the spring of 1981 SWT and special education personnel held joint discussions directed toward development of a much more comprehensive and suitable testing policy for special education students.

3. To what extent did participation of special education students in System-wide Testing match the guidelines for participation?

As described in question two, the guideline for 1979-80 test participation of special education students was dependent on the number of hours (more than two) spent each day in a special class. Since the student data base portions of the special education computerized information system did not include number of hours in a special class, it was impossible to determine the exact match between the number of special students eligible for testing and those actually tested. Additionally, the method of the study was to merge end-of-year computerized student f[illegible] and some students may not have been enrolled in special education at the time of testing.

It was necessary to estimate the number of special education students eligible for testing by selecting those instructional arrangements which most nearly approximated the two-hour special class attendance guideline. Instructional arrangement was maintained on the computer system and was therefore available for analysis. The arrangement codes selected were:

A = total regular class enrollment with consultative assistance.

B = total regular class enrollment with itinerant service or related service.

C = total regular vocational education with assistance from a special educator.

D = total regular vocational education with no assistance from a special educator.

E = regular class enrollment with special class attendance less than 50% of the day.

Instructional arrangements A-D clearly were within the two-hour special class guideline, since these involved total regular class experience. Hence, all students with any arrangement of A-D were eligible for test participation.

Arrangement E indicated less than 50% special class attendance, which would have been less than three hours per day. In this latter case, the instructional arrangement only approximated the testing guideline and would have identified some students as having been eligible, when in fact, they would not have been eligible for test participation. While the extent of this over-identification was not known, it was thought to have been relatively small.

Table 4 reports the number and percent of special education students in terms of approximated eligibility. These data show that the percent

Table 4

Approximated Eligibility for Test Participation

Population	Test	Total Tested	Eligibility			
			Likely		Unlikely	
			N	%	N	%
All Handicaps	ITBS	4,025	3,612	90%	413	10%
	TAP	412	253	61%	159	39%
	BOAT	1,856	1,460	79%	396	21%
	TABS	437	362	83%	75	17%
Excluding Speech	ITBS	1,806	1,393	77%	413	23%
	TAP	357	198	55%	159	45%
	BOAT	1,247	851	68%	396	32%
	TABS	302	227	75%	75	25%

tested who were eligible (approximated) ranged from 61% for the TAP to 90% for the ITBS. The latter percent suggested a high degree of compliance with the testing guideline, but this was inflated by the inclusion of the large number of speech only students (N=2,219, Table 3) whose instructional arrangement was categorically within the two-hour guideline. Table 4 shows also that when speech only students were excluded from analysis, the percent tested who were eligible (approximated) ranged from 55% (TAP) to 77% (ITBS).

Table 5 presents the analysis of test eligibility in terms of individual grades. Grade nine showed the least evidence of compliance with the testing guideline in that 57% (TAP) and 55% (BOAT) were eligible (approximated) for test participation.

Analysis of testing eligibility by primary handicap of special education students found that the EMR and ED handicap categories had the largest incidence of ineligibility. These results are given in Table 6, and further inspection shows that an appreciable number of SLD students were also ineligible for testing.

4. What percent of special education students scored above chance within each test in the System-wide Testing program?

The SWT computer files included a chance score designation for the ITBS and TAP tests. Analysis of these scores found that 81% of the special education students tested on the ITBS and 62% tested on the TAP scored above a chance level. When speech only students were excluded, these percents were 69% for the ITBS and 60% for the TAP. This indicated that for the majority of students tested, scores reflected something other than just guessing behavior. Table 7 presents results of this analysis.

Table 5

Approximated Eligibility for Test Participation by Grade Level[a]

Grade	ITBS			TAP			BOAT			TABS		
	Total Tested	Eligibility		Total Tested	Eligibility		Total Tested	Eligibility		Total Tested	Eligibility	
		Likely	Unlikely		Likely	Unlikely		Likely	Unlikely		Likely	Unlikely
1	795	96%	4%									
2	759	95%	5%									
3	633	90%	10%				669	88%	12%			
4	473	92%	8%									
5	4.5	92%	8%							283	89%	11%
6	396	84%	16%				422	84%	16%			
7	297	71%	29%									
8	257	80%	20%				311	76%	24%			
9				206	57%	43%	223	55%	45%	154	71%	29%
10				122	61%	39%	139	64%	36%			
11				84	73%	27%	84	74%	26%			
12							8	0	100%			
Total	4,025	90%	10%	412	61%	39%	1,856	79%	21%	437	83%	17%

[a]Includes all handicaps.

Table 6

Approximated Eligibility for Test Participation by Primary Handicap[a]

Primary Handicap[b]	ITBS			TAP			BOAT			TABS		
	Total Tested	Eligibility		Total Tested	Eligibility		Total Tested	Eligibility		Total Tested	Eligibility	
		Likely	Unlikely		Likely	Unlikely		Likely	Unlikely		Likely	Unlikely
Vision	30	90%	10%	11	100%	0%	17	100%	0%	5	100%	0%
Regional Deaf	30	63	37	11	82	18	4	50	50	4	50	50
Orthopedic	24	71	29	7	57	43	17	71	29	7	71	29
Health Impaired	155	81	19	19	42	58	74	68	32	23	96	04
EMR	197	55	45	54	35	65	165	47	53	33	39	61
TMR	5	0	100	0			11	9	91	1	0	100
ED	62	53	47	10	20	80	49	29	71	10	40	60
SLD	1,290	81	19	199	53	48	750	70	30	196	78	22
Speech	2,219	100	0	55	100	0	609	100	0	135	100	0
Pregnant	13	100	0	46	100	0	149	100	0	26	100	0
Autism	0			0			0			0		
Total	4,025			412			1,856			437		

[a]Includes all handicaps.

[b]EMR - educable mentally retarded, TMR - trainable mentally retarded, ED - emotionally disturbed, SLD - specific learning disability.

Table 7

Percent of Special Students
Above and Below Chance
Performance

Population	Test	Total Tested	Above Chance N	Above Chance %	At or Below Chance N	At or Below Chance %
All Handicaps	ITBS	4,025	3,249	81%	776	19%
	TAP	412	256	62%	156	38%
Excluding Speech	ITBS	1,806	1,252	69%	554	31%
	TAP	357	214	60%	143	40%

Another dimension to change performance on the tests was the potential relationship between test eligibility and chance performance. Table 8 reports an analysis of chance performance in terms of eligibility (approximated) for testing. The percent of special students who scored above chance on the ITBS was much greater for those who were likely eligible than for those who were likely ineligible. This pattern was evident for the TAP, but the difference was less pronounced. When speech students were excluded, these differences were further diminished.

5. How did results from this study compare with previous research?

A study similar to the current study was completed in March 1977 (Macy, 1977). Comparison of results from the two studies revealed several interesting findings. The first was that the number of special education students tested almost doubled from 1977 to 1980, and a second finding was that the percent of special education students tested in the SWT increased markedly from 28% in 1977 to 42% in 1980. Table 9 summarizes these comparisons.

Further inspection of Table 9 shows that the number of grades included in the testing program almost doubled from 7 grades to 12 grades. However, the percent of special education students tested who were in grades 1-8 remained almost the same from 88% in 1977 to 90% in 1980.

Another variable considered in both the 1977 and the 1980 studies was the percent of special education students tested who performed above a chance level. As discussed previously under question four and presented in Table 7, the majority of special students tested in 1979-80 scored above chance. This contrasted sharply with results from the 1977

Table 8

Analysis of Chance Performance
by Approximated Eligibility for Testing

Population	Test	Total Tested		Eligible for Testing: Likely: Subtotal Tested	Likely: Chance Performance: Above	Likely: Chance Performance: Equal or Less	Unlikely: Subtotal Tested	Unlikely: Chance Performance: Above	Unlikely: Chance Performance: Equal or Less
All Handicaps	ITBS	4,025	N	3,612	3,003	609	413	246	167
			%		83%	17%		60%	40%
	TAP	412	N	253	167	86	159	89	70
			%		66%	34%		56%	44%
Excluding Speech	ITBS	1,806	N	1,393	1,006	387	413	246	167
			%		72%	28%		60%	40%
	TAP	357	N	198	125	73	159	89	70
			%		63%	37%		56%	44%

Table 9

Comparison of Test Participation
by Special Education Students
for 1977 and 1980

Variable	1977[a]	1980
End-of-year special education enrollment	8,051	10,739
Number of special education students tested	2,249	4,479
Percent special education enrollment tested[b]	28%	42%
Number of grades included in testing program[c]	7	12
Number of special education students tested who were in grades one through eight	1,978	4,025
Percent of total special education students tested who were in grades one through eight	88%	90%

[a]Values were derived from Tables 1 and 2 in Special Education System-wide Test Scores of Target Population, Interim Report No. SE77-067-5-8. End-of-year special education enrollment statistic was taken from Table 1 in Context Evaluation of the 1979-80 Special Education Program, SE80-114-31-80.

[b]Percent was based on the number tested with the ITBS.

[c]Actual grades included from 1977 were 1,2,4,6,8,9, and 12. The MRT was used in grade 1, the ITBS in grades 2,4,6, and 8, and the ITED in grades 9 and 12. In 1980, grades included were 1 through 12. In order to avoid duplication, tabulations included the ITBS in grades 1-8 and the BOAT ir grades 9-12.

study where the percent above chance was typically 15% to 40% (Macy, 1977, Table 10). Unfortunately, comparison of these percents was relatively meaningless since the ITBS had undergone major revision and renorming during the interval between the two studies, and there was little basis for meaningful comparison.

Discussion

The study found that a significant number of special education students participated in the SWT program (N=4,479), and comparison with previous research showed that this was almost double the number tested three years earlier. In 1977, 28% of the total special education population participated in the testing program, and in 1980 the percent tested had increased to 42%.

The major explanation for the phenomenal increase in the number of special education students tested was most probably the large increase in the extent of testing carried out by SWT. Not only had the extent of testing increased, but the kinds of tests and motivations for testing had increased as well. These developments underscored the need for a refined policy regarding participation of special education students in the testing program.

Results from the study had several implications for policy development. Perhaps the most significant was that policy statements can influence the integrity of test scores of special education students. Results showed that a greater proportion of students who likely met the two-hour guideline scored above a chance level than did those who likely did not meet the guideline.

Another policy implication was that any policy statement may be difficult to implement. Results clearly suggested that a number of special education students participated in the testing who were

ineligible according to the two-hour guideline. Furthermore, policy compliance apparently varied across tests and/or grade levels. There was some indication that policy violation likely occurred more frequently at the secondary level.

Additional Information

Macy, D. Special Education System-wide Test Scores of Target Population (SE77-067-5-8). Dallas, Texas: Dallas Independent School District, Department of Research, Evaluation, and Information Systems, March 1977.

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EVALUATION OF THE STRUCTURED ENVIRONMENT FOR THE EMOTIONALLY DISTURBED (SEED) PROJECT

SE81-118-81-08

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Dallas, Texas
August 1981

SE81-118-81-08

Evaluation of the Structured Environment for the Emotionally Disturbed (SEED) Project, 1980-1981

Evaluators: Donald E. Hawkins and Alberta M. Rogers

Description of the Program

Objectives of the Program. The Structured Environment for the Emotionally Disturbed (SEED) Project was a model program designed to facilitate the provision of individualized education for the handicapped as specified by Public Law 94-142. The project involved carefully sequenced experiences across three levels for participating students. The three-level, structured environment employed behavior technology, curriculum intervention, parental involvement, and therapeutic intervention (individual and group counseling).

Level I was characterized by a highly structured token economy and/or social point rewards system with short work tasks to develop school-appropriate behavior. The environment of Level II was designed to emphasize the refinement of academic and social skills by employing contingency contracting. Level III was designed to employ the natural contingencies found in regular classrooms with increased behavioral expectations. Instruction was provided on a one-to-one basis in Levels I and II and on a small group basis, when feasible, in Levels II and III. The instructional program and the curriculum materials used depended upon individual student needs. Also employed were such concepts as break time, time-out and crisis intervention. Personnel included a visiting teacher, educational diagnostician, and psychologist.

Objectives of the program. The program was intended to provide an instructional system that would meet the needs of the individual student participants by assisting them to adjust and function intellectually, emotionally, and socially at an expected level. The primary purpose of the program was the development of an effective and replicable model for serving children diagnosed as severely emotionally disturbed. The 1980-81 school year was the third year of the program's proposed three-year developmental period. Third-year implementation focused on the refinement of program components and on continuing the delivery of services to emotionally disturbed students.

Purpose of the Evaluation. The evaluation of the program focused on providing decision makers with information relative to: (a) the degree of program implementation; (b) the attitudes of program students, non-project personnel, and parents toward the program; and (c) the achievement of the students. The extent to which the students developed more socially acceptable behavior was stressed as a program outcome. Changes in the rate of disciplinary referrals, suspensions, dropouts, disruptive classroom behaviors, and truancy were some of the major determinants.

Methodology

Sample. Students designated to enter the program were identified through a multidisciplinary process as having an emotional condition that had been medically and/or psychologically determined to be such that they could not be adequately and safely educated in the regular classes of the public schools without the provision of special services. These

students, diagnosed as severely emotionally disturbed, also met the Texas eligibility requirements consistent with Public Law 94-142. The program was implemented at two schools, one elementary and one secondary:

School	Grades	No. Students	No. Teachers
Harry C. Withers	K-6	21	3
Hillcrest North	7-12	32	4

A sample of participating students' parents consisted of 10 parents. The non-participant professional sample consisted of 31 staff members at the two program sites (19 teachers, 4 administrators, and 8 others including clerical, security and appraisal team personnel) and 72 staff members at 26 non-program sites (18 appraisal team members, 24 teachers and 30 administrators). The surveys relied on voluntary return of questionnaires, and the rate of return varied across sample groups.

Instrumentation. Instruments used to facilitate data collection for program evaluation included:

1. Project SEED Student Interview Form. A questionnaire designed to solicit student reaction to the program.

2. Parent Questionnaire. A questionnaire designed to solicit parent reaction to DISD schools, Project SEED and to their child's participation in the program.

3. Project SEED Reaction Questionnaire. A questionnaire designed to solicit the reaction and perceptions of non-project personnel located at program sites.

4. Project SEED Staff Development Evaluation Form. An instrument designed to assess the usefulness of the staff development session as perceived by participants.

5. Project SEED Personnel Interview Form. A form designed to obtain demographic information about the program staff.

6. Project SEED Classroom/Site Observation Form. A combination checklist and open-ended questionnaire used during formal classroom/site observations of implementation procedures and facilities and equipment inspections.

7. Project SEED Impact Questionnaire. A questionnaire designed to solicit information used in the determination of the impact Project SEED has made upon the delivery of services to emotionally disturbed students in DISD.

Another major source of information was management records which provided information pertaining to:

1) Frequency and style of parental contacts.
2) Frequency and style of counseling activities.
3) Frequency and style of student movement between levels.
4) Frequency and style of student inappropriate behaviors.
5) Frequency of time-out incidents.
6) Number of suspensions and drop-outs.
7) Attendance and truancy.
8) Academic progression.
9) Number of referrals to regular school and other settings.
10) Follow-up on students dismissed from the program.

Evaluation design and data analysis. Project staff, teachers and aides maintained daily records and behavioral profiles for students participating in the program. These data were collected and reviewed at six-week intervals by evaluation personnel. The data were analyzed and compared with baseline data to determine individual student progress. Partners in Learning Student Progress Forms were used to determine individual academic progression. Parental involvement/contact logs and counseling logs were maintained by the project visiting teacher and by project psychologists, respectively. Information from these logs was collected and reviewed at midterm and at the end of the year.

A description of the program sites, the facilities, the students and staff were reported in the Project SEED First Quarter Demographic Report (Hawkins, 1980). Implementation of the program components during the period of August 25, 1980, to January 15, 1981, was addressed in the midyear process evaluation report (Hawkins, 1981).

Second- and third- year project students were interviewed at the end of the year. Parents of project students and non-project personnel located at project sites were administered questionnaires at the end of

the year along with other professionals District-wide. Results of these questionnaires are addressed in this, the final report, along with evaluation results for the remainder of the 1980-81 school year.

Major Evaluation Questions and Results

1. What were the characteristics of the schools, students and staff?

This question was addressed in the Project Seed First Quarter Demographic Report (Hawkins, 1980), to which one may refer for additional information. The information reported therein reflected the status of the program as of December 12, 1980. The major findings of that report were as follows:

1. Project SEED was being implemented in two DISD schools: H. C. Withers Elementary and Hillcrest North Sedondary School.

2. Forty-five students had enrolled, including 16 elementary students and 29 secondary students. These were made up of 74% Black, 24% White and 2% Hispanic, with 89% males.

3. All specified staff members were present, with the exception of an educational diagnostician. There were 22 staff members, including 7 teachers, 7 teacher aides, 1 crisis aide, 4 psychologists (2 part-time), 1 home-school coordinator, and 2 project managers. The staff was made up of 36% Black and 69% White, with 68% females.

4. All specified facilities were available. However, a breakroom, the time-out room, and a crisis room at the secondary site were in extremely poor condition. One crisis room at the elementary site was also in poor condition.

Since the December report, nine male students enrolled in the program, including five elementary students (two Black, two White and one Hispanic) and four secondary students (three Black and one White). Also, there were five secondary students staffed out of the program at the time of the interim report. Two of those students re-enrolled in late April 1981; one from a residential facility and the other from a state hospital.

There were five turnovers in staff positions. Two teachers, two aides and a crisis aide left the program (though not at the same time) and new ones were hired. One teacher left the program in late October 1980 and was replaced by another who also left in early April 1981. A permanent replacement was not hired. The vacated classroom was supervised/monitored by various program staff members.

Facilities and equipment reported as being in extremely poor condition at the beginning of the year included a breakroom, time-out room and a crisis room at the secondary site and a crisis room at the elementary site. These facilities and equipment were not repaired, and they continued to deteriorate through the year.

2. Were the components of behavior management, parental involvement, and curriculum and therapeutic interventions implemented as planned?

This question was addressed, in part, in the Project SEED Mid-Year Process Evaluation Report (Hawkins, 1981), to which one may refer for additional information. The information reported therein addressed the implementation of program components during the period of August 25, 1980, to January 15, 1981. A summary of the major findings is shown in Table 1.

The results of process evaluation efforts since January 1981 are reported as follows:

Curriculum Intervention. Curriculum intervention was implemented with varying degrees of success across program sites, with the elementary site realizing a closer approximation to specifications. In response to the lack of an established systematic

Table 1

Summary of Mid-Year Process Evaluation
Project SEED 1980-1981

Program Component	Program Site	Extent of Implementation	Area of Concern (Perceived Problems)	Modifications	Outcome (End Product)
Curriculum Intervention	Elementary	Instructional procedures and curriculum programming as specified with supplementary use of Partners in Learning baseline materials.	IEP forms 4.0 not complete across all areas.	None	N/A
	Secondary	Instructional procedures as specified. Curriculum programming as determined by individiual instructors.	IEP forms 4.0 not complete across all areas; no systematic approach to academic programming.	Requested assistance from management team and area professionals.	None

Table 1 (continued)

Summary of Mid-Year Process Evaluation
Project SEED 1980-1981

Program Component	Program Site	Extent of Implementation	Area of Concern (Perceived Problems)	Modifications	Outcome (End Product)
Therapeutic Intervention (counseling)	Elementary	Individual and group counseling provided.	Specified frequency of group counseling not realistic.	Provision of group counseling once a week for each student.	Optional conditions for achieving program objectives.
	Secondary	Individual and group counseling provided. Inconsistent provision of crisis counseling.	a) Intended impact of counseling services diffused by inappropriate student-staff interactions. b) Specified frequency of group counseling not realistic.	a) Altered make-up of staff. b) Provision of group counseling once a week for each student.	a) Enhanced conditions for achieving program objectives. b) Optimal conditions for achieving program objectives.
Parent Involvement	Elementary and Secondary	Limited; formation of parent groups not realized; approx. 12% individual parent participation. Emphasis on "crisis" counseling and emergency type assistance.	a) Insufficient personnel to implement full range of specified activities. b) Lack of interdisciplinary communication.	a) None b) Establishment of interdisciplinary reporting and data collection procedures.	a) N/A b) In process

Table 1 (continued)

Summary of Mid-Year Process Evaluation
Project SEED 1980-1981

Program Component	Program Site	Extent of Implementation	Area of Concern (Perceived Problems)	Modifications	Outcome (End Product)
Behavior Management	Elementary	Usually systematic application of token economy with generally consistent schedule of positive and negative reinforcement contingent on behavioral specifications with few observed exceptions.	No major problems identified; possible need for specialized in-service training, concerns pertaining to apparent stagnancy of behavioral progress of certain students.	In development stages	N/A
	Secondary	Established specified application of token economy but realized fluctuating degrees of success in systematic implementation and an inconsistent provision of specified positive and negative reinforcement.	Insufficient orientation of staff to model theory, program objectives, and specified implementation procedures; possible need for specialized in-service training.	Altered make-up of staff; limited in-service training established schedule for individual staff development activities.	Established conditions more conducive to achieving intended outcomes; 46%-53% of staff indicated increased knowledge and understanding of individual roles and a possible increase in effectiveness when applied.

approach to curriculum intervention in the past, the management team adopted the Partners in Learning diagnosis, placement and assessment procedures to be used to establish baseline academic objectives for individual students participating in the program. Instructors at the elementary site employed the Partners in Learning program successfully, while secondary instructors never initiated the program. This was due, apparently, to unfamiliarity with the procedures and a lack of assistance from management and area professionals. The provision of academic instruction was further hampered at the secondary site due to the high frequency, intensity and chronicity of classroom disruptions and problematic behaviors.

In accordance with Public Law 94-142, Individualized Education Programs (IEPs) were developed for all program students. There was evidence of multidisciplinary development of IEPs, and all IEPs (form 4.0) had been updated in May 1981, although only 6 (43%) and 17 (59%) were complete across all areas at midterm at the elementary and secondary sites, respectively. All other specifications for curriculum intervention appear to have been met, including instructional procedures and use of academic contracts.

Therapeutic Intervention. Due to the amount of time involved and scheduling conflicts, group counseling was provided once a week for each student rather than once a day as originally specified. Also, individual counseling was provided for Level I students, although this was not specified.

Systematic procedures for identifying specific student objectives to be addressed in individual counseling sessions were not developed across sites. The objectives sought were determined largely on a subjective basis by program psychologists and other

persons directly involved with the student. Many times these were centered on the overall counseling objectives stipulated in the grant.

At the elementary site, two Level II students were not involved in any individual counseling because there appeared to be no 'need' for it as reported by the staff psychologist. However, all students were involved in group counseling at least once a week.

At the secondary site, psychologists developed a rating scale which delineated behavioral, communication, counseling, and social awareness objectives which should be met by students in various levels of the program. The instrument was used also to determine the general areas in which counseling should be provided but was not employed as a formal measure.

The intended impact of specified counseling services at the secondary site was hampered at one point during the first semester when students were exposed to varying contingencies, dimensions, and patterns of counseling interactions. Management acknowledged this problem and made subsequent changes in staff personnel. A full day of staff development was also provided for all personnel at both sites. Staff changes were incomplete when staff development was provided, and personnel hired subsequently did not receive the intended benefits of this staff development.

Parent Involvement. There was a turnover in the position of home/school coordinator this year, as there was during each of the two previous school years. It had been previously determined that optimal parental involvement activities would require the services

of more than one home/school coordinator, but funds were not available.

Grant specifications called for the formation of parent groups in an effort to help provide training in parenting skills, social interaction skills, behavior management techniques, sharing of common experiences and program effectiveness feedback to staff. Parent training meetings were scheduled for November 1980 and March 1981. Four sessions were planned for each time period, and a Parent Advisory Committee was to be formed during the November sessions. Although it was not entirely unexpected by management, no parents or guardians of students from either school attended the November or March meetings. Only about 12% of students' parents have maintained contact with the schools on a voluntary basis (Hawkins and Rogers, 1979, Hawkins and Rogers, 1980.) The reasons for the low parental involvement rates are discussed in a succeeding section of this report.

Nevertheless, information taken from the home/school coordinator's statistical report indicated an upsurge in the amount of activities undertaken as compared to past reports. Activities through midterm were reported in the Project SEED Mid-year Process Evaluation Report (Hawkins, 1981). During the time from February 2 to June 17, 1981, the home/school coordinator referred to SEED student cases 189 times, 188 of which were for social/behavioral problems.

The Project SEED Mid-year Process Evaluation Report indicated that the parent involvement component was not implemented as a training program for individual parents or parent groups. While it

is true that parent groups were never formed, additional information supplied by the home/school coordinator indicated that parent training was provided on an individual basis whenever possible. The additional information, which encompassed a time from January 19 to June 17, 1981, indicated that the home/school coordinator made 122 home visits involving 50 families. Parents/guardians were provided training in parenting skills 146 times, social interaction skills 145 times and behavior management techniques 139 times. Also program effectiveness feedback was provided to parents 151 times. The additional information provided also indicated that the home/school coordinator interacted with staff members 25 times relating to parenting skills, 34 times relating to social interaction skills, 42 times relating to behavior management techniques and 328 times involving program effectiveness feedback.

In consideration of the overwhelming magnitude of activities implied by these figures, it seems apparent that any given activity might have resulted in the documentation of a single occurrence in two or more areas of concern.

Behavior Management. The degree to which behavior management was implemented varied across classrooms and other settings and across program sites. The secondary site experienced the greater degree of fluctuation as evidenced by formal observations during the first semester and subsequent site visits.

Classroom management strategies at the elementary site were generally found to be implemented as specified, with a few exceptions noted during observations (Hawkins, 1981). Level I classrooms were found to be well-organized and efficiently run with

points or tokens and fines being administered appropriately. The Level II classroom was very well-organized and seemed to be relatively efficient. However, students were sometimes prompted to exhibit criteria behaviors and students were not consistently fined for inappropriate behavior or earned points in spite of inappropriate behavior. Points and fines were found generally to be administered as specified across other settings at the elementary site. Time-out and data collection procedures were also administered as specified.

The implementation of specified behavior management strategies at the secondary site was impeded by several factors. The program manager, three teachers, two crisis aides, two classroom aides, and four student volunteers were participating in the program for the first time this year (1980-1981). In addition, there were turnovers in five staff positions including two teachers, one crisis aide and two classroom aides. This resulted in the concurrent implementation of at least three different intervention theories and models and a general loss of the program's overall focus. It was later decided by the management team and area school administrators that a staff development session would be conducted to provide a general overview of the program and its specified procedures and practices, and to identify competencies needed by the various participating professionals.

Formal observations at the secondary site during the first semester and sporadic subsequent visits indicated appropriate awarding of points and fines in the Level II classroom. Two Level I classes were relatively well-organized and well-run, however, "out

of area" students and noisy time-out procedures were observed to be disruptive elements for all classrooms. The other Level I classroom was observed to be less organized and less efficient. During observations, students in this class were continually prompted to exhibit appropriate behaviors. Warnings were generally ignored as students walked about the room talking constantly. No points or fines were observed being awarded during formal observations.

Specified time-out procedures were not consistently followed. While the procedures leading up to the time-out incident were implemented generally as specified, the breakdown in following specifications usually occurred when the student reached the time-out room. Students in the time-out room were observed to have been allowed the opportunity to interact with other students and staff members. One student was placed in the locked crisis room without having exhibited "out of control" or dangerous behavior. No "crisis counseling" was formally observed following time-out incidents, and one crisis aide was observed using intimidation and aggression, rather than the specified temperament of neutrality. Secondary management acknowledged problems within this area and, together with other management team members and staff, implemented plans to remedy the situation, including secondary staff personnel changes and a full day of staff development, as previously noted.

Aside from the fact that secondary-level emotionally disturbed students tend to be more difficult to manage, there were other factors which appeared to hamper specified implementation procedures at the secondary site. Student interactions with other students or staff during time-out was unavoidable whenever there were more than

two students in the time-out room. Furthermore, secondary students usually required one-to-one supervision especially when they were experiencing crisis. These procedures, which sometimes lasted for hours, usually consumed considerable time of male staff members who were few in number and had other responsibilities. Still other barriers which appeared to have been inherent in the program structure and methodology will be addressed in a succeeding section of this report.

3. To what extent did students exhibit changes in frequency of inappropriate behaviors?

An analysis of daily behavioral charting records maintained by classroom teachers indicated no identifiable patterns of reduction in the frequency of inappropriate behaviors and time-out incidents for program students as a whole. Some individual students exhibited increases in inappropriate behaviors and time-out incidents, some exhibited decreases, and still others exhibited no changes. The data indicated that the number of time-out incidents reflected the severity of inappropriate behaviors and not necessarily the absolute number of inappropriate behaviors.

Elementary. Behavioral data for elementary students were available for a number of days ranging from 12 to 145. These data were averaged per five days of participation for individual students and analyzed for evidence of significant changes across time. As shown in Table 2, a majority (67%) of the elementary students exhibited no significant changes in frequency of inappropriate behaviors or disruptive/severe behaviors which necessitated time-out procedures. Four (19%) students exhibited significant decreases in

Table 2

H. C. Withers Elementary
Behavioral Outcomes

Number Days Participation	Number Students	Positive Change	No Change	Negative Change
126 - 145	9	1	7	1
101 - 125	2	1	0	1
76 - 100	4	1	2	1
50 - 75	3	1	2	0
30 or less	3	0	3	0
Total	21	4(19%)	14(67%)	3(14%)

frequency of inappropriate behaviors and time-out incidents. These four students were also promoted from Level I to Level II, and one was promoted farther to Level III. Three (14%) students, one of whom was a third-year Level II participant, appeared to make negative changes. Three other elementary students who exhibited no relative changes were involved also in program level promotions because they exhibited relatively low frequencies of inappropriate behaviors and earned classroom breaks (free-time) consistently.

Secondary. Behavioral data for secondary students were available for a number of days ranging from 2 to 145 as shown in Table 3. These data indicated that 28 (88%) students exhibited no significant change in frequency of inappropriate behaviors or behaviors necessitating time-out procedures. Several of these students exhibited patterns of increasing frequency of inappropriate

behaviors during the months of November and December 1980, when the the secondary staff experienced significant disagreement about program philosophy and methodology. These increasing patterns tended to reverse after Christmas 1980.

Four (12%) students exhibited dereasing patterns of inappropriate behaviors and time-out incidents. One of these (the only one promoted through program levels) was staffed into a home-school resource room. The other three students, whose data indicated improvement, were reportedly among the more difficult students to manage. One was sent to a state hospital; one was sent to a residential facility and he was later "kicked-out" because of severe behaviors and re-enrolled in Project SEED in April 1981; and the third one was involved in seven suspensions which represented 22%

Table 3

Hillcrest North Secondary
Behavioral Outcomes

Number days Participation	Number Students	Positive Change	No Change	Negative Change
126 - 145	8	0	8	0
101 - 125	4	1	3	0
76 - 100	2	0	2	0
51 - 75	5	1	4	0
26 - 50	6	2	4	0
2 - 25	7	0	7	0
Total	32	4(12%)	28(88%)	0

of all program suspensions and the most suspensions involving one program student. Additionally, subjective reports from staff members and other behavioral data from management records indicated no improvement for the students. Nevertheless, daily behavioral logs for these three students indicated decreasing frequencies of inappropriate behaviors.

Data collection procedures were not implemented consistently or systematically at the secondary site. Time-out incidents were recorded for individual students on days that no inappropriate behaviors were recorded in any setting (classroom, breakroom, lunchroom or bus). Sometimes there was no documentation on some students, and/or data were incomplete. As such, the number of students who actually increased or decreased their frequency of inappropriate behaviors might be significantly different than reported.

4. To what extent did students move from a restrictive to a lesser restrictive environment?

Of the 21 students who enrolled at the elementary site, 18 (86%) began on Level I of the program and three began on Level II. Only Level I students experienced level promotions. Five (24%) students experienced one promotion and two (10%) experienced two promotions. One of the latter two students was partially mainstreamed before the end of the year. No elementary students were completely mainstreamed.

Secondary students appeared to be making more progress in advancing toward regular classroom participation, as can be seen in Table 4. Twenty-five (78%) students began on Level I of the program, and seven began on Level II. Level I and Level II students

Table 4

SEED Program Promotions
1980-81
N=53

Site	N	Levels Promoted			Number Mainstreamed[a]
		0	1	2	
Elementary	21	14	5	2	0
Secondary	32	22	5	5	3
Total	53	36(68%)	10(19%)	7(13%)	3(6%)

[a]Number of students completely mainstreamed during school year.

experienced program promotions at the secondary site. Five (16%) students, including one Level I student and four Level II students, were promoted one level. Five (16%) Level I students experienced two progam promotions. Five of the ten students who experienced level promotions were mainstreamed for more than 50% of the day. Two were restaffed into resource rooms at their home schools, and three students were mainstreamed full-time.

Two of the students who were mainstreamed part of the day and one who was fully mainstreamed were unsuccessful in their regular classes and were again participating in the SEED program full time by the end of the year. Two went back to Level I and one to Level II. Because of the severity of their handicapping conditions, two students were placed in a residential facility and a state hospital, respectively. They later returned to Level I of the program in April 1981. Still another student was demoted from Level II to Level I.

It should be noted that students could be promoted within the program if they consistently earned classroom breaks (free-time)

across a specified period of time. In some cases, this was possible for students who exhibited a relatively low frequency of inappropriate behaviors. A decrease in frequency of inappropriate behavior was not necessarily a criterion for promotion.

Twenty-three (43%) program students, including eight elementary and fifteen secondary students, were scheduled to attend self-contained affective learning classes in 1981-82 as shown in Table 5. Nineteen (35%) students, including twelve elementary and seven secondary students, were scheduled to attend resource rooms at or near their home schools. Four students were scheduled to attend regular classes. These included two who were mainstreamed during the year and two who were scheduled to be mainstreamed based on Admissions, Review and Dismissal proceedings.

Since November 1978, the SEED Program has served 133 different students. Twelve students have participated all three years. Others have experienced various lengths of participation ranging from two days to two years. Of the 133 students served by the program, 11 (8.2%) have been completely mainstreamed into regular classes. Three of these students were mainstreamed between school years on the basis of Admissions, Review and Dismissal (ARD) proceedings. The other eight students moved through the levels of the program and were mainstreamed during a school year.

Discussions with program staff and information from management records (Project SEED Student Follow-Up Form) indicated that 3 of the 11 mainstreamed students were unsuccessful in regular classes and were later enrolled in special education classes. The other eight mainstreamed students have either graduated from high school

Table 5

Student Disposition[a]
May 28, 1981

	Other DISD Sp. Ed. (SC)	DISD Resource Room	DIST Reg. Ed.	State Hospital	Residential Facility	Dropped Out
H. C. Withers Elementary	8 (15%)	12 (22%)				1 (2%)
Hillcrest North Secondary	15 (28%)	7 (13%)	4 (7%)	1 (2%)	1 (2%)	4 (7%)
Total	23 (43%)	19 (35%)	4 (7%)	1 (2%)	1 (2%)	5 (9%)

[a]Reg. Ed. - Regular Education, SC - Self-Contained, Sp. Ed. - Special Education

Table 6

Cumulative SEED Program Promotions
Through Three Years

Site	N	Levels Promoted 0	1	2	Number Mainstreamed[a]
Elementary	62	27	30	5	3
Secondary	71	34	26	11	5
Total	133	61(46%)	56(42%)	16(12%)	8(6%)

[a]Number of students completely mainstreamed during a school year.

or were still enrolled in regular classes. Table 6 illustrates the extent of student movement across three years.

Overall, 72 (54%) students moved from the most restrictive environment (Project SEED Level I) to a lesser restrictive environment, and 11 (8%) students were placed full-time in the least restrictive environment (regular class). However, three (2%) students who were staffed into regular classes were later placed in more restrictive settings.

5. To what extent did changes occur in the rate of truancies, drop-outs and suspensions among project students?

The make up of the student population at both program sites changed from year to year, and any noticeable changes across years in attendance rates and suspensions were closely related to individual student behavior and did not necessarily imply any programmatic influences. Any changes noted during the school year were more likely, however, to have been associated with programmatic influences, though not necessarily.

Elementary. The average daily membership for the second semester at the elementary site was 18.5 students, and the average daily attendance rate was 90.9%. These compare to first semester rates of 12.2 and 92.2%, respectively. A comparison across years is presented in Table 7.

There were three elementary students who appeared to be having attendance problems during the first semester. Two of these students sometimes chose not to board the school bus in the mornings. The third student had experienced several residential moves which created transportation problems. Second semester attendance rates for these students increased to 84%, 90% and 97% as

compared to 81%, 80% and 82% attendance rates during the first semester.

There were five suspensions involving two students at the elementary site. There had been no suspensions in the first two years of the program (1978-79, 1979-80).

Table 7

Attendance and Suspensions
1978-1981

Program Site	Behavioral Vairable	School Year		
		1978-1979	1979-1980	1980-1981
Withers Elementary	Total Enrollment	26	38	21
	Average Daily Enrollment	11.9	27.7	15.4
	Average Daily Attendance	81.5%	85.8%	91.3%
	Suspensions	0	0	5
	(No. Students Involved)	(0)	(0)	(2)
	Truants (Percentage)	6(23%)	1(3%)	0(0%)
	Drop-outs(Percentage)	0(0%)	0(0%)	0(0%)
Hillcrest Secondary	Total Enrollment	27	40	32
	Average Daily Enrollment	21.9	20.0	22.9
	Average Daily Attendnce	42.8%	66.7%	75.9%
	Suspension	18	20	32
	(No. Students Involved)	(11)	(10)	(15)
	Truants(Percentage)	17(63%)	20(50%)	14(44%)
	Drop-Outs	5(19%)	13(33%)	4(13%)

Secondary. The second semester average daily enrollment at the secondary site was 23.3 students, and the average daily attendance was 74.4%, as compared to 22.8 and 77.4% during the first semester. Traditionally, truancy has been a problem at the secondary site, and 1980-81 was no exception. There were 14 students with attendance

rates of 69% or less. It was not clear as to which factors contributed to poor attendance, but long bus rides were believed to have been one deterrent to better attendace rates for secondary students.

There were 32 suspensions involving 15 students, and 20 (63%) of these occurred during the first semester. This was the most number of suspensions involving Project SEED students during any one school year and represented a 60% increase in suspensions over the 1979-80 school year and a 67% increase over the 1978-79 school year. While most of the suspensions were probably due to individual student behavioral types, it is likely that some were the result of first semester fluctuations in program philosophy and methodology as they were influenced by new staff members.

6. To what extent did students progress academically?

Academic progression was not systematically monitored during the 1978-1979 school year. Beginning in the fall of 1979, the administration of standardized achievement tests was to occur at entry and exit according to project guidelines. The Wide Range Achievement Test (WRAT) was accepted by the management team and was to have been administered at least in the fall and again in the spring of each school year. The staff at the elementary site met this guideline with greater success during the 1979-80 school year than did the secondary site staff. Results from the WRAT were available for 23 students at the elementary site and 7 students at the secondary site. The WRAT was administered to all students enrolled at both sites in the fall of 1980. However, because of limited success with the WRAT in past years and because of serious

questions about the precision of scores and the validity of the test itself, management opted not to proceed with the spring 1981 WRAT administrations.

Data pertaining to academic progression of program students during the 1980-81 school year were obtained from the Partners in Learning Student Progress Forms. The academic objectives established for individual students varied in absolute number and included a range of grade levels from kindergarten to fourth grade for elementary students.

At the elementary site, the number of academic objectives established via use of the Partners in Learning Student Progress Forms, which encompassed those academic objectives delineated in students' IEPs, ranged from 8 to 45, with an average of 27. Students in the two Level I classes mastered an average of 37% to 41% of their established objectives. The percentage of objectives mastered for individuals in those two classes ranged from 4% to 63%. Level II elementary students' percentage of mastery ranged from 18% to 66% with an average of 36%. Progress forms at the elementary site indicated that students had begun making progress on other academic objectives as well.

The Partners in Learning program was not employed at the secondary site. IEPs developed at the end of 1979-80 school year were usually developed by different instructors than in 1980-81, especially in terms of short-term objectives. When compared to short-term objectives developed on IEPs at the end of 1980-81, no continuity or follow-up on previous IEPs was apparent. Furthermore, there was no indication of "disposition" of previous short term

objectives as indicated by beginning, ending, and review dates. Long-term goals were not specific and usually remained the same or were very similar to previous ones. As such, no determination of academic progress for secondary students could be made with IEP short-term objectives as a guide. Subjective reports on the part of secondary instructors indicated that most students were thought to have been making academic progress.

7. What were the reactions of students, parents and non-project school personnel to the project?

Students. Fourteen students who had participated in the program for at least two years were interviewed in an attempt to assess their reactions to the program. Students' overall reactions to the program were 43% favorable and 57% unfavorable. The sample of interviewees included seven elementary students and seven secondary students. All students (100%) interviewed indicated that they were aware of the special program in which they were enrolled, but only nine (62%) students knew why they were enrolled in the program. Three elementary and two secondary students either did not know or would not admit why they were enrolled in Project SEED. While eleven (79%) students indicated a nonwillingness to be in the program, three elementary students indicated a desire to be in the program, including one who did not know or admit why he was enrolled in the program.

The students seemed aware of the events and activities taking place around them. All students (100%) interviewed indicated a desire and a need to learn, and most (71%) indicated that the best thing about school in general was the academic program. Items

identified as "dislikes" about school were varied, including being labeled special education (30%), time-out (21%), bad peer behavior (21%), intimidation by male staff (14%), and riding the school bus (14%).

Twelve (86%) students indicated that they would like to get out of Project SEED for several reasons, including a desire to attend regular classes and to rid themselves of the special education label and their "bad peers." Thirteen (93%) demonstrated a knowledge of how to get out of the program. A copy of the Project SEED Student Interview Form appears in Appendix A.

Parents. Questionnaires were sent to fifty-three parents and guardians, and only ten (19%) were returned. The 19% parental response rate was comparable to that realized at the end of the 1978-79 and 1979-80 school years. Attempts to solict more parental feedback via the telephone were unsuccessful. Nevertheless, while 80% of the responding parents indicated that services provided by DISD were about the same as in the past, and 20% indicated a provision of better services, most (90%) indicated that the services provided by DISD were good or excellent. As such, 78% indicated a good attitude toward the schools, with 44% indicating a better attitude and 44% indicating no change in attitude toward the schools. Two respondents indicated a negative attitude, with one indicating an attitude which was worse than before their children were placed in Project SEED.

A majority (67%) of the parents perceived their children's behavior at home and at school to be better than it was before participation in Project SEED. All other respondents, except one,

perceived no change in their children's behavior. One parent perceived the child's behavior to be worse since enrolling in the program. Parents' overall reaction to their children's participation in Project SEED were 50% very positive, 30% positive, and 20% neutral. These figures were comparable to those obtained during the 1978-79 and 1979-80 school years. Selected results of the Parent Questionnaires for each program year are shown in Table 8.

Non-project personnel. The Project SEED Reaction Questionnaire was administered to non-project personnel (N=31) at each program site at the end of the 1980-81 school year, as it was at the end of the 1978-79 and 1979-80 school years. The reaction of personnel at the elementary site for the first two years remained consistent, while the reaction of secondary respondents fluctuated. Information obtained at the end of 1980-81 indicated some definite changes, which are discussed separately for each program site in the succeeding text. One factor which has remained consistent across all three years is that respondents demonstrated a critical lack of knowledge about special education in general, and many of the attitudes expressed were a definite reflection of this general naiveté. Selected items from questionnaire results for each program year are shown in Table 9 for the elementary site.

Elementary. During the previous two years, non-project personnel at the elementary site indicated a 100% positive overall reaction to Project SEED with only a few minor problems noted. Information obtained for 1980-81 indicated that respondents felt that the implementation of Project SEED at their school caused: (a) interruption of and/or divergence from their regular activities (45%); (b) problems for other students (36%); and (c) adverse reactions from teachers and staff (27%). While these figures may

Table 8

Selected Responses to Parental Questionnaire
H. C. Withers Elementary

Questionnaire Item	Year	N[a]	Response Category		
			Better in Past	About the Same	Better Since SEED Program
Perception of DISD Special Education Services	78-79	12	8%	50%	42%
	79-80	23	0%	33%	67%
	80-81	10	0%	80%	20%
Parental attitude toward schools	78-79	12	0%	67%	33%
	79-80	23	0%	75%	25%
	80-81	10	12%	44%	44%
			Better Than Before	About the Same	Worse Than Before
Perception of child's behavior at school since SEED Program	78-79	12	92%	8%	0%
	79-80	23	67%	33%	0%
	80-81	10	67%	22%	11%
Perception of child's behavior at home since SEED Program	78-79	12	83%	17%	0%
	79-80	23	67%	33%	0%
	80-81	10	67%	33%	0%
Perception of child's overall progress	78-79	12	33%	67%	0%
	79-80	23	42%	50%	8%
	80-81	10	70%	30%	0%
			Positive	Neutral	Negative
Parental attitude/ reaction to child's participation in SEED Program	78-79	12	100%	0%	0%
	79-80	23	73%	17%	10%
	80-81	10	80%	20%	0%

[a]The return was greater than 19% due to telephone follow-up in 1979-1980.

Table 9

Selected Results of Non-Project Personnel
Responses to Reaction Questionnaire,
H. C. Withers Elementary

Questionnaire Item	1978-79 (N=10)		1979-80 (N=8)		1980-81 (N=11)	
Aware of SEED	100%	Yes	100%	Yes	100%	Yes
	0%	No	0%	No	0%	No
Interruption of regular activities	10%	Yes	25%	Yes	45%	Yes
	90%	No	75%	No	55%	No
Adverse reaction from other students	10%	Yes	25%	Yes	36%	Yes
	90%	No	75%	No	64%	No
Adverse reaction from teachers	0%	Yes	0%	Yes	27%	Yes
	100%	No	100%	No	73%	No
Change any aspects of SEED	0%	Yes	0%	Yes	55%	Yes
	100%	No	100%	No	45%	No
Any reasons why SEED should not be implemented at your site	0%	Yes	0%	Yes	18%	Yes
	100%	No	100%	No	82%	No
Any problems for regular students	10%	Yes	25%	Yes	36%	Yes
	90%	No	75%	No	64%	No
Any parental/ community concerns	0%	Yes	38%	Yes	45%	Yes
	100%	No	62%	No	55%	No
Any problems for other teachers/staff	0%	Yes	0%	Yes	27%	Yes
	100%	No	100%	No	73%	No

Table 9 (continued)

Selected Results of Non-Project Personnel
Responses to Reaction Questionnaire,
H. C. Withers Elementary

Questionnaire Items	1978-79 N=10	1979-80 N=8	1980-81 N=11
SEED replication could prove valuable to regular ED population	50% Agree 10% Undecided 30% Disagree	38% Agree 12% Undecided 50% Disagree	33% Agree 45% Undecided 22% Disagree
Further study of SEED as model program	90% Agree 0% Undecided 0% Disagree	88% Agree 12% Undecided 0% Disagree	60% Agree 30% Undecided 10% Disagree
Need for new additional program and techniques	80% Agree 10% Undecided 0% Disagree	75% Agree 25% Undecided 0% Disagree	60% Agree 40% Undecided 0% Disagree
Overall reaction to SEED Program	20% Strong positive 70% Positive 10% Neutral 0% Negative 0% Strong negative	25% Strong positive 75% Positive 0% Neutral 0% Negative 0% Strong negative	18% Strong positive 27% Positive 27% Neutral 27% Negative 0% Strong negative

not seem significant in and of themselves, they represent significant changes from past studies. There have been a few changes in the non-project personnel at both sites but the persons who responded to the questionnaires remained relatively the same for each year.

A majority (55%) of the respondents indicated that some aspects of the program should be changed, but there was no concensus as to which programmatic changes were needed. Forty-five percent (45%) of the respondents indicated that the program had caused some noted concern on the part of parents and others in the community. While there was no concensus as to whether or not the replication of the SEED program in additional settings could make a valuable contribution to the delivery of services to emotionally disturbed students, a majority (60%) agreed that the program should be further studied as a model program and that there is a need for new programs and techniques. Overall reactions at the elementary site were 18% strong positive, 27% positive, 27% neutral and 27% negative.

Secondary. Table 10 reports selected reactions of non-project personnel to Project SEED at the secondary site. Non-project personnel (N=20) reactions at the secondary site were mixed across the years. In 1978-79 36% were positive, 18% were neutral, and 30% were negative. The 1979-80 reactions were mostly positive (67%), but respondents at the secondary site indicated a relatively strong negative reaction to the Project SEED's 1980-81 implementation in their school.

A majority of the respondents indicated that implementation of the program at their school caused: (a) interruption and divergence

Table 10

Results of Selected Items from
Non-project Personnel Reaction Questionnaire
Hillcrest North Secondary

Questionnaire Item	1978-79 N=17		1979-80 N=15		1980-81 N=20	
Aware of SEED	88%	Yes	87%	Yes	100%	Yes
	12%	No	13%	No	0%	No
Interruption of regular activities	47%	Yes	47%	Yes	80%	Yes
	41%	No	40%	No	20%	No
Adverse reaction from other students	65%	Yes	33%	Yes	85%	Yes
	24%	No	53%	No	15%	No
Adverse reaction from teachers	41%	Yes	40%	Yes	90%	Yes
	47%	No	47%	No	10%	No
Change any aspects of SEED	59%	Yes	53%	Yes	95%	Yes
	29%	No	33%	No	5%	No
Any reasons why SEED should not be implemented at your site	35%	Yes	13%	Yes	75%	Yes
	53%	No	73%	No	25%	No
Any problems for regular students	59%	Yes	13%	Yes	85%	Yes
	29%	No	73%	No	15%	No
Any parental/ community concern	6%	Yes	20%	Yes	65%	Yes
	82%	No	67%	No	35%	No
Any problems for other teachers/staff	47%	Yes	33%	Yes	90%	Yes
	41%	No	53%	No	10%	No

Table 10 (continued)

Results of Selected Items from
Non-project Personnal Reaction Questionnaire
Hillcrest North Secondary

Questionnaire Item	1978-79 N=17	1979-80 N=15	1980-81 N=20
SEED replication could prove valuable to regular ED population	41% Agree 24% Undecided 24% Disagree	33% Agree 40% Undecided 13% Disagree	65% Agree 10% Undecided 25% Disagree
Further study of SEED as model program	59% Agree 18% Undecided 12% Disagree	67% Agree 13% Undecided 7% Disagree	45% Agree 25% Undecided 30% Disagree
Need for new/ additional program and techniques	35% Agree 35% Undecided 18% Disagree	60% Agree 20% Undecided 7% Disagree	70% Agree 10% Undecided 20% Disagree
Overall reaction to SEED Program	20% Strong positive 70% Positive 0% Neutral 0% Negative 0% Strong negative	13% Strong positive 53% Positive 7% Neutral 7% Negative 7% Strong negative	0% Strong positive 25% Positive 5% Neutral 20% Negative 50% Strong negative

from regular activities (80%); (b) problems for regular students (85%); and (c) adverse reactions from teachers and staff (90%). Respondents also indicated that not only were there certain aspects of the program which should be changed (95%), but also that the program should not be implemented in their school building (75%).

Most of the concerns centered on the unruly nature of the SEED students, their general lack of respect for regular teachers and students, and the perceived loose structure under which the students were governed, with little or no punishment for their rude and abusive actions. Typical comments of about 80% of the respondents were that the SEED students and "students like them," should be housed in a separate facility away from "regular people" (to quote selected respondents). Lastly, 70% of the respondents agreed that there is a need for new techniques and procedures for managing emotionally disturbed students. Many indicated that corporal punishment should be allowed. Overall reactions to Project SEED at the secondary site were 25% positive, 5% neutral, 20% negative and 50% strong negative.

In summary, project acceptance had declined across the three years at both the elementary and secondary sites, and reactions were more negative at the secondary site. Of course, sampling error could have accounted for some of the variation from year to year, but the consistency of the decline suggested that project acceptance had deteriorated among non-project staff.

8. What impact did the SEED Project make upon the delivery of services to the emotionally disturbed population in DISD?

With the exception of Project SEED, there were no model or experimental programs for emotionally disturbed students in the DISD. There were 44 Affective Learning classes designated for emotionally disturbed students including the 7 classes associated with the SEED program. Many of the techniques and strategies employed in the SEED program were employed also, to varying degrees, in other affective learning classrooms, including token economies or point systems, earned free time, time-out, parent involvement, and to some extent, the use of other DISD support services.

Project SEED differed from other affective learning settings because of the additional full-time support personnel and facilities. Additional personnel included: (a) a program manager at both sites who coordinated daily implementation activities, monitored student behavior and provided teacher support; (b) a school psychologist who provided group and individual counseling support to students on a regularly scheduled basis; and (c) a home/school coordinator who encouraged and supported parental involvement activities. Program specifications also called for a full-time educational diagnostician to assist with academic assessments and instructional programming. Additional physical facilities at each site included a staff office room, a group/individual counseling room, a breakroom equipped with toys, games, etc., and a time-out room equipped with two crisis-room components.

In an attempt to determine what impact the program had within the District, 139 professionals who have been involved with segments

of the emotionally disturbed student population were surveyed. Seventy-two (52%) surveys were returned. Respondents included 30 (42%) administrators, 24 (33%) classroom instructors, and 18 (25%) case managers and appraisal team members. Results of selected items from the survey are shown in Table 11, and a copy of the survey is contained in Appendix B.

Survey results indicated that 17% of the respondents had never heard of Project SEED. Of those who had, 56% indicated that the program provided a viable placement alternative for severely problematic students. Of the 44% who indicated that the program had not provided a viable placement alternative and gave an explanation as to "why not," 92% indicated that either they did not know they could make referrals to the program or that they were told students from their sub-district could not participate in the program. In such cases, where access to the program was not available, several alternative actions were indicated including: (a) request for residential placement (23%); (b) time-out procedures (19%); (c) suspension and parental conferences (16%); (d) use of crisis-teams (13%); (e) use of other DISD support personnel (13%); and (f) use of home-bound program (6%).

Of the respondents who were familiar with SEED, 68% indicated that the program had not persuaded them to alter their classroom/school management techniques or procedures. This was partially due to the fact that many of the techniques used in the program were already being used elsewhere in the District by the 1980-81 school year. Overall perceptions of the Project SEED were generally favorable, although 47% agreed that the program was implemented poorly and needed improvement.

Table 11

Results of Selected Items from the
Project SEED Impact Questionnaire

Familiarity with existence of Structured Environment for the Emotionally Disturbed (SEED) Project: 72 Respondents.

58% Yes | 25% Somewhat | 17% No

SEED Provided viable placement alternative for severely emotionally disturbed or socially maladjusted students: 66 Respondents

24% Yes | 32% Somewhat | 44% No

Procedures, techniques and supportive services employed with emotionally disturbed students District-wide: 60 Respondents

63% Token economy
83% Point system
76% Free time
95% Parental contacts
33% Social services
62% Home/School Coordinator
65% Physical restraint
72% Time-out
73% Disciplinary referrals
77% Psychological services
3% Crisis Teams

Perception of Project SEED: 66 Respondents

27% A much needed program and should be expanded
11% A good program but needs improvement
36% A poorly functioning program but a good idea.
2% A poor program with little or no impact.
24% No opinion.

Discussion

The need for classroom discipline has been mentioned as the most important need by teachers of the emotionally disturbed and by other special education teachers in general (Gotts, E., & Pattavina, P., 1979). Traditionally there has been no provision made for a consistent and uniform structure within the classrooms and across classrooms to promote behavior management. As a result, the schools have been forced to rely primarily upon suspensions and occasionally the juvenile justice system to deal with those students who are disruptive or aggressive. The results of such tactics are unclear in terms of effect except to say that the student is in school less and thereby less of a school problem. When and if the student returns to school, the underlying problems usually have not been resolved and frequently are repeated.

The Structured Environment for the Emotionally Disturbed (SEED) project arose out of the need for a consistent conceptual approach to the delivery of services to identified emotionally disturbed students enrolled in the Dallas Independent School District. The SEED program was to organize the instructional ecology for more severely disturbed students through the provision of carefully sequenced experiences designed to enable them to function successfully in other instructional settings in special and regular education. While each component of the program was designed to meet specific objectives, the four components appeared interdependent upon each other for overall success. The behavior management component seemed to be the backbone of the entire program.

A range of services, instructional arrangements, and teaching strategies are known to be needed to accommodate the number of different

students who exhibit varying degrees of difficulty in affective functioning (Pappanikou, Kochanek and Reich, 1974). The behavior management component and its associated implementation strategies were clearly the most important aspects of the program. The behavior management component was incorporated into the other components of the program and its strategies were applied within all settings of the program. As such, assessment of the effect of each component was difficult, especially when effect was measured largely by changes in overt behaviors. Specified implementation of Project SEED across all components and across both program sites was never really completely realized, and furthermore, overall student progress did not seem to reflect the degree of program implementation realized.

Implementation of Project SEED across its three-year duration did not appear to be approached with much enthusiasm. The co-authors of the original grant, who served as program managers, were the only staff persons who seemed to have a firm grasp on how the model should operate. Unfortunately, administrative support was lacking. Furthermore, the secondary manager/co-author resigned prior to the 1980-81 school year. Despite management's early requests to be allowed to select persons to help implement the program or to have interested persons volunteer to work with the program, program personnel were assigned to work with the program via regular District procedures. Turnovers in staff personnel, together with insufficient orientation to the program, staff development and in-service training, presented further barriers to optimal implementation. As such, there was disunity, lack of morale and dissatisfaction among program personnel. Other problems and concerns with implementing each component are discussed in the following text.

Curriculum. Although any academic gains realized by program students were viewed as a welcome by-product, the goal of the schools, as obvious as it may seem, is to teach and promote learning. A systematic approach to curriculum intervention was not achieved until this, the last year (1980-1981), and this achievement was experienced at the elementary site only. Full scale attempts at curriculum intervention have been precluded traditionally by the frequency, intensity and chronicity of disruptive classroom behaviors. Nevertheless, based on past studies from the first two years of the project, most participating students made academic progress as indicated by pre/post Wide Range Achievement Test scores (Hawkins & Rogers, 1980; Hawkins & Rogers, 1979).

Parental Involvement. Only about twelve percent of program students' parents have maintained contact with program personnel on a regular basis. Furthermore, emphasis on parental involvement activities occurred traditionally only at the elementary site. This seemed due to the notion that parents of the younger children seem to have more faith in their children's ability to overcome their handicapping condition. As such, they tend to exhibit higher "Hope Indexes" (Morse, W., 1980), while parents of secondary age children, having experienced longer histories of school and home associated behavioral problems, tend to disassociate themselves from the schools and the children and, for the most part, "give-up." Nevertheless, there were other organizational problems associated with attempts to establish optimal parental involvement activities.

Both program sites were located in the Northwest Subdistrict and 42 (91%) of the program students were bused to school during the 1980-81 school year, and comparable numbers were bused the two previous years.

The distances between program sites and home communities posed transportation problems for parents. Futhermore, only four (9%) 1980-81 program students were from homes where both parents (or two guardians) lived. Thus employment, other dependent care, and other home priorities seemed to present additional barriers to optimal parental involvement activities.

In the past, parents have expressed concern about additional behavioral and attendance problems associated with a child's reluctance to board school buses and ride to distant parts of town. They have asked also why program sites could not be located in neighborhood schools where the majority of participating students lived (Hawkins & Rogers, 1979). Discussions with home/school coordinators have indicated that some parents would have become more involved if individualized parent training, counseling, and behavior management activities could have been conducted in their homes. However, optimal individualized activities would have required the services of more than one home/school coordinator.

Staff Development. The evaluation of the December 1980 staff development session indicated that about one-half of the participants felt that the session was meaningful, that they acquired a better understanding of the SEED model and their individual roles, that they would apply newly acquired skills/knowledge, and that follow-up sessions were desired. Although the evaluation was conducted in an anonymous respondent fashion, it seemed likely that the aforementioned perceptions were primarily those of new staff members. Since new staff members did not comprise half of the 1980-81 staff, it also seemed apparent some second- or third-year participants perceived the session to be beneficial. Nevertheless, the data indicated that perceived needs, abilities, knowledge and skills of the SEED staff appeared quite diverse.

Staff development during 1979-80 was provided by evaluation personnel in the area of data collection and documentation procedures to individual staff members. During 1979-80, staff development was provided by non-project consultants on a variety of topics. Staff members indicated that schedules and dates of those sessions were not generally known and not all staff persons participated fully. Orientation to program goals and methodology was not systematically provided in a timely fashion.

Behavior Management and Supportive Counseling. Behavior management and supportive counseling activities were very closely linked, as were the overall goals of each component. Without saying that the elementary site achieved greater success in affecting student behavioral change through implementing these two components, it can be said that problems in implementing these two components were more apparent at the secondary site.

Fifty percent (50%) of the staff at the secondary site were participating in the program for the first time this school year (1980-81). Although these new staff members were probably familiar with the SEED program, they did not initially receive the benefit of any formal orientation. General staff meetings were held in which classroom procedures and criterion behavior were emphasized. However, specific behavioral management procedures were not incorporated into a conceptual framework which was consistent with program goals and implementation procedures. Therefore, although new staff members became aware of overall program goals and specific implementation procedures within their individual settings, students were exposed to varying contingencies as well as varying dimensions and patterns of interaction across settings.

This problem was not as severe in the past. Many authorities in the field of behavior management have noted that the placement of appropriate behavioral limits and the rejection of irresponsible behavior should be addressed with continuity and fairness across all "program" settings. This was not the case, as some staff members reported communication breakdown among the staff in reference to the apparent differential treatment of certain program students. Effective communication processes and strategies are needed to manage conflicts and to promote greater student accountability (Gallagher and Harris, 1976; Redl, 1976; Morse, 1976).

Alterations in the token economy, point system and criterion behaviors and changes in program procedures were made as managmement perceived the need. Many of the changes were made in attempts to provide "relevance" to program students and thus to make students more responsive to the program structure. However, many students would not work for the points or tokens on a consistent basis, and the desire to make a break (free time) apparently diminished as the number of breakroom experiences increased.

Many authorities agree that one of the most important things, as perceived by youth, is peer acceptance. Program students were self-contained and had little interaction with the regular school population. As such, much of the "modeling" provided to program students was done so by other program students. This, together with the special education label, which many students detested, seemed to reinforce inappropriate behaviors and lend credit to the notion of "self-fulfilling prophecy." For example, two Level II secondary students who were participating in the program for the third straight year had data which

indicated very few inappropriate behaviors for two years, but the 1980-81 data for these students showed periods of increased frequencies of inappropriate behaviors at two distinct times on the year. Also, three Level II elementary students' data indicated a period of increased inappropriate behaviors when three newly promoted Level I students entered their class. In both the elementary and secondary cases, it seemed apparent that the short periods of increased inappropriate behaviors exhibited by these students were in some way influenced by peer behavior.

The program staff has traditionally been made up of approximately 70% Whites and 70% females, whereas the student population has traditionally been made of about 78% Blacks and 85% male. All classroom instructors have been female. Recent studies tend to support the notion that students of all races have a preference to be "helped" by someone of the same sex, same age, same race and especially someone of the same social class background (Ramirez, R., 1980; Gordon, M. & Grantlham, R. J. 1979; Thompson, R. A. & Cimbolic, P. 1978).

In conclusion, the basic principles and philosophy of the SEED Project appeared sound and viable. However, problems inherent in the program implementation structure prevented the program from realizing consistent and even basic implementation and, thus, precluded a definitive opportunity for model success or assessment of that success.

However, in spite of all the barriers to optimal implementation, there were indications that the SEED Program may have assisted in promoting more affective social, intellectual and emotional behaviors among some program student participants. Twenty-two 1980-81 program students, who began in self-contained settings, were scheduled to attend

resource rooms or regular classes in 1981-82. Attendance rates at both program sites increased across the three years, whereas truancy and drop-out rates tended to decrease. Seventy-two (54%) of the students who enrolled across the three years, experienced movement to lesser restrictive environments. Lastly, and perhaps most important, eight (6%) students, previously diagnosed as severely emotionally disturbed, were successfully reintegrated into regular classrooms with nonhandicapped peers.

Additional Information

Hawkins, D. E. Project SEED Mid-Year Process Evaluation Report (SE81-118-52-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, April 1981.

Hawkins, D. E. Project SEED First Quarter Demographic Report (SE81-118-51-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, December 1980.

Hawkins, D. E. and Rogers, A. M. Evaluation of the Structured Environment for the Emotionally Disturbed (SEED) Project (SP80-118-31-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, October 1980.

Hawkins, D. E. and Rogers, A. M. Evaluation of the Structured Environment for the Emotionally Disturbed (SEED) Project (SP79-430-31-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, November 1979.

References

Galliger, J. R. and Harris, H. I. Emotional Problems of Adolescents. New York: Oxford University Press, 1976.

Gordon, M. and Grantlham, R. J. Helper preference in disadvantaged students: Journal of Counseling Psychology, 1979, 26, 4, 337-343.

Gotts, E. A. and Pattavina, P. Trainer's Manual for "Outer Dimensions of Classroom Conflict." Richardson, Texas: School of Human Development, The University of Texas at Dallas, 1979.

Hawkins, D. E. Project SEED Mid-Year Process Evaluation Report (SE81-118-52-08). Dallas, Texas: Dallas Independent School District Department of Research and Evaluation, April 1981.

Hawkins, D. E. Project SEED First Quarter Demographic Report (SE81-118-51-08). Dallas, Texas: Dallas Independent School District Department of Research and Evaluation, December 1980.

Morse, W. C. An invited address, "Stress Management,": Teaching Students who are Emotionally Disturbed, Summer Institute, Dallas, Texas June 1980.

Morse, W. C. Crisis intervention in school mental health and special classes for the disturbed in N. L. Long, W. C. Morse and R. G. Newman (ed.) Conflict in the Classroom. Belmont, California: Wadsworth Publishing Co., 1976.

Poppanikou, A. J., Kochanek, T. and Reich, M. Continuity and unity in special education, Phi Delta Kappa, April, 1974.

Ramirez, R., an invited address, "Bilingual/Bicultural Aspects of Emotional Disturbance." Teaching Students Who Are Emotionally Disturbed, Summer Institute, Dallas, Texas, June 1980.

Redl, F. The Concept of the life-space interview" in N. J. Long, W. C. Morse and R. G. Newman (eds.) Conflict in the Classroom: Belmont, California: Wadsworth Publishing Co., 1976.

Redl, F. "The Concept of Punishment" in N. J. Long, W. C. Morse and R. G. Newman (eds) Conflict in the Classroom, Belmont, California, Wadsworth Publishing co., 1976.

Thompson, R. A. and Cimbolic, P., Black students counselor preference and attitudes toward counseling center use. Journal of Counseling Psychology 1978, 25, 6, 570-579.

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PROCESS EVALUATION OF THE 1980-81 PROJECT KIDS OUTREACH

SE81-117-81-08

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Dallas, Texas
August 1981

SE81-117-81-08

Process Evaluation of the 1980-81 Project KIDS Outreach (Kindling Individual Development Systems)

Evaluators: Margaret E. Mullen and Alberta M. Rogers

Description of the Program

Objectives of the Program. Project KIDS (Kindling Individual Development Systems) Outreach is a third-year program which was designed to increase the number of quality programs for young handicapped children through replication of the Project KIDS model training, and demonstration and dissemination activities. Project KIDS is a DISD model home-to-school transition program for handicapped infants, toddlers, preschool children and their families. The Outreach program, which is financially supported by the Bureau for the Education of the Handicapped in the U. S. Office of Education, is part of a nationwide network of early childhood projects for the handicapped. The three potential service delivery program settings include a home-based training program for infants (0-24 months), a center-based training program for toddlers (24-36 months), and a school-based early childhood program for preschoolers (36-60 months). The KIDS Outreach component concentrated service delivery efforts on the school-based early childhood population (three- to five-year-olds). The support systems provided to each setting included appraisal/curriculum, staff development, parent involvement and program evaluation components.

The objectives of the project apply to several levels which include the following:

Local Level

1. Replicate all or a portion of the four Project KIDS program components in all early childhood classes in the Dallas Independent School District.

Regional Level

2. Continue replication of the selected program components of Project KIDS in the four regional school districts served during 1979-80 (Duncanville, Grand Prairie, Lancaster, and Collin County).

3. Replicate all or a portion of the Project KIDS program components in a minimum of two additional sites in the area served by Education Service Center, Region X.

4. Conduct demonstration and information-sharing activities to increase public awareness of the program model and of the importance of early intervention.

State Level

5. Participate in the Triple T Consortium (Teaching Texas Tots), a statewide organization for projects that serve handicapped infants, to promote and encourage permissive legislation for handicapped infants from birth to three years of age.

National Level

6. Distribute Project KIDS dissemination packages in appraisal, curriculum, staff development, parent involvement, and evaluation to other early childhood programs, public and private schools, and regional service centers to facilitate the development of quality programs.

7. Participate in the Urban Consortium, a coalition of agencies and individuals involved with delivery of services to young handicapped children.

Participation in KIDS Outreach by regional school districts was decided by local school option. The Education Service Center, Region X, advised regional districts of the availability of KIDS Outreach, and these districts opted to participate in Outreach in accordance with their needs.

Project objectives and budget called for replication of the KIDS model components in all early childhood classrooms in the Dallas ISD and a minimum of two additional districts in Region X. KIDS Outreach implementation in the Dallas ISD included 49 sites and the commitment to two additional regional sites (Sherman, Texas, and Denison, Texas) was realized.

Purpose of the Evaluation. The evaluation sought to monitor the implementation process of the KIDS model program at each replication site. The monitoring activities were expected to provide feedback to the project replication specialists and management in order to facilitate program implementation through modification and adaptation of selected components to each individual site.

Monitoring activities were also expected to document the degree of program implementation at each replication site and the reaction of professional participants to selected components of the model program. Evaluation activities were expected also to assess the degree to which program materials were disseminated at the local, regional and national levels through the sale of prepared packets of Project KIDS materials and through demonstration activities by project staff.

Sample. The student sample included the population of students served in local and regional Outreach and in local infant stimulation sites during the 1980-81 school year. The population consisted of 516 students.

The teacher population was composed of the 63 teachers (49 local, 14 regional) involved in the KIDS Outreach program during the 1980-81 school

year. The population of product users included those 139 individuals and organizations who previously had ordered Project KIDS dissemination products.

Evaluation Design: The model implementation study was conducted near midyear with a random sample of local and regional outreach teachers and again near the end of the year with all local and regional Outreach teachers. Model implementaton data were obtained via personal interviews and teachers' records, while reaction data were obtained through mail-out questionnaires.

The project staff's calendar of activities during 1980-81 provided information regarding demonstration/dissemination activities of the project. At midyear, the users of the project's dissemination products were contacted via a mail-out questionnaire. Other data regarding project implementation were obtained as needed throughout the year from project records, with the Special Education Computerized Information System providing demographic data on students served locally. Data collection activities are illustrated in Table 1.

Major Evaluation Questions and Results

1. What demographic characteristics described the students served in the program?

At the close of the 1980-81 school year, 459 students were receiving services at the 44 local and 14 regional Outreach sites. An additional 57 students were receiving services at the five local infant stimulation sites. Table 2 presents a tabulation of students served in each instructional setting both locally and regionally.

Demographic information and handicap information are presented in Tables 3 and 4. At the end of 1980-81, 516 students were receiving services in all local and regional classrooms.

Table 1

Project KIDS Outreach 1980-81
Data Collection Activities

Sampling Scheme	Resulting Sample Size	Procedure	Instrument	Description	Time of Collection
Nine randomly selected teachers representing local Outreach classrooms	9	Classroom observations, interviews, reviews of records	Model Implementation Classroom Observation Form (mid-year)	Determine extent of Model implementation	December 1980
Nine randomly selected teachers representing local Outreach classes	7	Mail-out questionnaire	Model Implementation Questionnaire (mid-year	Determine reactions to technical assistance, staff development, and the model program	December 1980
16 Regional Outreach participants including teachers & support personnel	7	Mail-out questionnaire	Model Implementation Questionnaire	Determine reactions to technical assistance staff development and the model program	December 1980

Table 1 (cont'd.)

Project KIDS Outreach 1980-81
Data Collection Activities

Sampling Scheme	Resulting Sample Size	Procedure	Instrument	Description	Time of Collection
139 Dissemination Product users 1980-81	24	Mail-out questionnaire	Dissemination Product User Questionnaire	Assess users' perceptions of usefulness and value of dissemination products.	April 1981
44 Local Outreach Teachers	44	Classroom observations, interviews, reviews of records	Model Implementation Classroom Observation Form (end-of-year)	Determine extent of model implementation	May 1981

Table 2

Tabulation of Students Served in Each Instructional Setting by Location

Location	Instructional Setting			
	Infant Stimulation		Outreach	
	Home-based	Center-based[a]	Early Childhood	Total
Local sites (n=49)	14	43	347	404
Regional sites (n=16)	-0-	-0-	112	112
Total	14	43	459	516

[a]Many children classified as receiving center-based services actually received a combination of home- and center-based services. Center-based students are thus defined as pre-early-childhood-aged students who received any center-based services, however continuous.

Table 3

Demographic Data For Students Served
As of May 29, 1981

Instructional Arrangement	Sex		Ethnicity				Age (years)								
	Male	Female	White	Black	Hispanic	Other/Not Specified	1	1	2	3	4	5	6	6	Total
Infant Stimulation															
Home-based	11	3		6	7	1	7	3	4						14
Center based	22	21	16	20	7		9	13	20				1		43
Outreach															
Local	225	122	143	148	53	3			15	72	93	119	35	13	347
Regional	70	42	90	12	10				1	7	30	39	20	15	112
Total	328	188	249	186	77	4	16	16	40	79	123	158	56	28	516
Percent	63.6	36.4	48.3	36.0	14.9	0.8	3.1	3.1	7.8	15.3	23.8	30.6	10.9	5.4	100.0

Table 4

Primary Handicapping Conditions For All Students Served
1980-1981

Site	Handicapping Condition										
	Vision Impaired	Hearing Impaired	Ortho-pedic	Other Health Imp.	EMR	TMR	ED	LLD	Speech	Not Spec.	Total
Infant Stimulation											
Home-based					2					12	14
Center-based	8			1	6			2		26	43
Outreach											
Local	3		23	46	76	16	13	138		32	347
Regional	3	1	8	8	44		3	16	29		112
Totals	14	1	31	55	128	16	16	156	29	70	516
Percent	2.7	0.2	6.0	10.7	24.8	3.1	3.1	30.2	5.6	13.6	100.0

[a]EMR = Educable Mentally Retarded
EMR = Trainable Mentally Retarded
ED = Emotionally Disturbed
LLD = Language/Learning Disabled

This figure compares with 476 students at midyear (February 1981) and represents an increase of 8.4%. Male students comprised 63.6% of the population, and White students constituted 48.3% of the population. As reported in past years, the most frequently designated handicapping condition was language/learning disabled (LLD) (30.2%), followed by educably mentally retarded (EMR) (24.8%). Other health impairment was the third most frequently designated handicap (10.7%).

The frequencies of children served each year since Project KIDS began are summarized in Table 5. Beginning in the fourth year of implementation (1978-79) federal funding was provided and 15 early childhood Special Education classes began implementing the model. During the course of federal funding, new early childhood classes were added each year until, in 1980-81, all early childhood classes within the Dallas ISD were implementing the model.

2. What were the observed improvements, if any, in the areas of developmental delay?

Home-based, center-based,. and early childhood students were observed to have made significant gains in all areas. While a total of 404 children were served in local classrooms during 1979-80, complete pretest and posttest performance scores were recorded for 251 children (62.1%). A summary of sample demographic characteristics are presented in Tables 6 and 7.

The largest group of sampled students in the home- and center-based settings was male (50%) and Black (41.1%). In the early childhood setting, the majority of the children were also male (67.6%) and Black (43.1%). While sex representation was similar

Table 5

Frequencies of Children Served Each Year (1975-1980)
by Instructional Setting
(Local Only)

Service Year	Instructional Setting: Infant Stimulation Home-Based	Instructional Setting: Infant Stimulation Center-Based	Instructional Setting: Outreach Early Childhood	Total
First Year (1975-76)	8	5	0[a]	13
Second Year (1976-77)	30	13	50	93
Third Year (1977-78)	36	22	70	128
Fourth Year (1978-79)	44	17	277	338
Fifth Year (1979-80)	24	36	363	423
Sixth Year (1980-81)	14	43	459	516
Total[b]	156	136	1219	1511

[a]One school-based class was operated for a few months during the first year, but these students were not included in the total since the limited amount of time did not allow for full implementation.

[b]Total is a duplicated tabulation since many continued enrollment across more than one year.

to the total population of Project KIDS students, the ethnic makeup of the sample tended to overrepresent Black students.

The average chronological ages at pretest and posttest for students served in the home-based setting were 20.9 months and 26.2 months, respectively. The average interval between pretest and posttest (duration of intervention) was 5.3 months.

Over the course of intervention, home-based students made an average gain in competency of 6.0 items across all subscales. Average item gains for each of the four subscales were: (a) Gross Motor, 7.1 items; (b) Fine motor, 5.7; (c) Cognitive/Language, 5.1; and (e) Self Care, 6.0. When converted to estimated developmental age (EDA) scores, the average gains on the four subscales were: (a) Gross Motor, 4.6 months; (b) Fine Motor, 4.4 months; (c) Cognitive/Language, 3.3 months; and (d) Self Care, 5.1 months. Tables 8 through 10 present average raw scores and EDA's for the pretest and posttest administrations of the KIDS Inventory for the three instructional settings. Tests of significance computed on the average pretest and posttest items passed in each subscale revealed that gains in all areas were not greater than would have been expected by chance ($p > .05$).

The average chronological ages at pretest and posttest for center-based students were 27.1 months and 34.3 months, respectively. The average duration of intervention for these children was 7.2 months, and the average gain in the number of items mastered across subscales was 7.2 items, with an age equivalent of 6.4 months. Average items gained on each of the four subscales were: (a) Gross Motor, 5.6; (b) Fine Motor, 6.7; (c) Cognitive/Lan-

Table 6

Demographic Data for Pretest/Posttest Sample, 1980-1981

Instructional Arrangement	Sex		Ethnicity				Total
	Male	Female	White	Black	Hispanic	Other	
Home- and Center-based	26	26	19	23	10	0	52
Early Childhood	140	67	76	89	41	1	207
Totals	166	93	95	112	51	1	259
Percent	64.1	35.9	36.7	43.2	19.7	0.4	100.0

Table 7

Summary of Handicapping Conditions of Children in the Pretest/Posttest Sample, 1980-81

Primary Handicap	Home-based		Center-based		Early Childhood		Total	
	N	%	N	%	N	%	N	%
Vision	1	6.7	10	27.0	2	1.0	13	5.0
Orthopedic			1	2.7	15	7.2	16	6.2
Other Health Impairment	2	13.3	1	2.7	30	14.5	33	12.7
Educable MR	5	33.3	9	24.3	54	26.1	68	26.3
Trainable MR					10	4.8	10	3.9
Emotionally Disturbed					9	4.4	9	3.5
Language/ Learning Disabled			1	2.7	75	36.2	76	29.3
Speech					7	3.4	7	2.7
Not specified	7	46.7	15	40.6	5	2.4	27	10.4
Totals	15	100.0	37	100.0	207	100.0	259	100.0

Table 8

Average Items Passed, Estimated Developmental Ages (EDA), and Gain Scores for Home-based Students on the September 1980 and May 1981 Administrations of the KIDS Inventory of Development (N=15)[a]

Inventory Subscale	Pretest		Posttest		Gain	
	N Items Passed	EDA[b]	N Items Passed	EDA	N Items Passed	EDA
Gross Motor	33.5	15.6	40.7	20.2	7.2	4.6
Fine Motor	28.5	14.4	34.2	18.8	5.7	4.4
Cognitive/ Language	34.2	15.6	39.3	18.9	5.1	3.3
Self Care	21.5	19.0	27.5	24.1	6.0	5.1
Mean Across Subscales	29.4	16.1	35.4	20.5	6.0	4.4
Mean Chronological Age	20.9		26.2		5.3	

[a]Those students lacking pretest or posttest records were excluded from computations.

[b]Age equivalents are expressed in months.

Table 9

Average Items Passed, Estimated Developmental Ages (EDA), and Gain Scores for Center-based Students on the September 1980 and May 1981 Administrations of the KIDS Inventory of Development (N=37)[a]

Inventory Subscale	Pretest		Posttest		Gain	
	N Items Passed	EDA[b]	N Items Passed	EDA	N Items Passed	EDA
Gross Motor	41.7	19.8	47.3	26.1	5.6	6.3
Fine Motor	32.9	17.6	39.6	23.9	6.7	6.3
Cognitive/ Language	35.5	16.5	46.5	24.4	11.0	7.9
Self Care	22.2	19.5	28.0	24.7	5.8	5.2
Mean Across Subscales	33.1	18.4	40.3	24.8	7.2	6.4
Mean Chronological Age	27.1		34.3		7.2	

[a]Those students lacking pretest or posttest records were excluded from computations.

[b]Age equivalents are expressed in months.

Table 10

Average Items Passed, Estimated Developmental Ages (EDA), and Gain Scores for Early Childhood Students on the September 1980 and May 1981 Administrations of the KIDS Inventory of Development (N=207)[a]

Inventory Subscale	Pretest		Posttest		Gain	
	N Items Passed	EDA[b]	N Items Passed	EDA	N Items Passed	EDA
Gross Motor	61.1	46.2	65.6	53.1	4.5	6.9
Fine Motor	54.0	44.3	59.2	53.5	5.2	9.2
Cognitive/ Language	73.0	41.1	83.6	49.7	10.6	8.6
Self Care	48.1	48.9	53.6	55.9	5.5	7.0
Mean Across Subscales	59.1	45.1	65.5	53.0	6.4	7.9
Mean Chronological Age	62.0		65.9		3.9	

[a]Those students lacking pretest or posttest records were excluded from computations.

[b]Age equivalents are expressed in months.

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guage 11.0; and (d) Self Care, 5.8. The EDAs of these scores were: (a) Gross Motor, 6.3 months; (b) Fine Motor, 6.3 months; (c) Cognitive/Language, 7.9 months; and (d) Self Care, 5.2 months. Tests of significance performed on the number of items passed on pretest and posttest administrations of the Inventory indicated that the gains achieved in all areas were greater than would have been expected by chance ($p < .05$).

The average duration of intervention for students served in District early childhood classes was 3.9 months. Average chronological ages at pretest and posttest were 62.0 months and 65.9 months, respectively. Over the course of intervention, early childhood students achieved an average gain of 6.4 Inventory items, representing a mean EDA gain of 7.9 months in each area. The mean items gained on each of the four subscales were: (a) Gross Motor, 4.5; (b) Fine Motor, 5.2; (c) Cognitive/Language, 10.6; and (d) Self Care, 5.5. The mean EDAs of these scores were: (a) Gross Motor, 6.9 months; (b) Fine Motor, 9.2 months: (c) Cognitive/Language, 8.6 months; and (d) Self Care, 7.0 months. Gains in all areas were found to be greater than expected by chance when tested for significance ($p < .05$).

3. To what extent was the Appraisal/Curriculum component implemented locally?

At midyear and again at the end of the year, observations were conducted in the local classrooms. The following elements of the Appraisal/Curriculum component were assessed to determine the degree of implementation.

a. Were all students being administered the KIDS Inventory of Development?

b. Was the teacher charting student activities using the MAPs?

c. Did each student have a folder which contained current MAPs, IEPs, and lesson plans?

d. Did the classroom have learning centers which reflected the four areas addressed by the KIDS model (gross-motor, fine-motor, cognitive/language, and self-care)?

e. Did classroom activities appear to be well organized?

Most students in local classrooms were receiving regular administrations of the KIDS Inventory of Development. Those students who had not been regularly assessed were those with erratic attendance or who were frequently hospital- or home-bound.

Not all teachers fully administered the Inventory. Frequently, teachers would begin at the approximate basal and administer the inventory from that point. When testing was conducted in this manner, the Inventory frequently reflected several failures in the basal area. Hence, no true basal was firmly established and students may have been given credit even though there was no recorded evidence that a skill had been mastered.

Twenty-four (49%) of the 49 teachers observed during May 1981 were found to be regularly charting student progress with criteria from MAPs. Nineteen (39%) of the teachers were observed to chart student progress using methods other than with MAPs. These charting methods frequently entailed marking regular progress on a combination charting form and daily lesson plan. The remaining six teachers (12%) were not observed to be charting student progress in any fashion.

Most teachers had written IEPs for each student, although not all IEPs were current as of May. Not all teachers had lesson plans for the students. Sometimes IEPs would be used as lesson plans, and other times teachers would conduct daily activities directly from the KIDS Inventory. Eleven teachers (22%) were not observed to have any lesson plans.

Forty-four (89%) classrooms were classified as having clearly discernible learning centers. The presence of learning centers appeared to be strongly related to the organization of instruction observed in the room. Those five rooms which did not have learning centers were also the classrooms in which poor organization of instruction was observed.

Taken as a whole, the evidence from the classroom observations conducted during May 1981 indicated that most teachers did not implement the appraisal/curriculum component of the model up to standard. Standard implementation would require that teachers employ <u>all</u> elements of this component and augment instruction with the use of cross-referenced programs and materials.

4. What characteristics described regional sites replicating the Project KIDS Model?

During 1980-81, the number of regional sites implementing components of the Project KIDS increased to 6 school districts, with 14 classrooms. The average size of the participating school districts was 7,641 students in a district, and this total ranged from 4,050 to 14,044 students. The average early childhood class size was 8 students and ranged from 2 students per class to 19 students per class. English was the primary language spoken among

the students. Each school district reported a strong support staff available for early childhood students. All districts reported the availability of physical therapists, occupational therapists, educational diagnosticians, counselors, and speech therapists. School psychologists were available in 3 of the 6 school districts.

An informal survey of the regional teachers revealed that 12 believed they had adequate space and 13 believed they had sufficient equipment and materials to implement the KIDS model. The average number of years total teaching experience among teachers was 5.4 years, while the average length of special education teaching experience was 4.6 years. Thirteen of the 14 regional teachers reported having previous experience teaching early childhood. The average early childhood teaching experience among these 13 teachers was 2.6 years.

All 6 school districts implemented the appraisal/curriculum component, 5 participated in staff development activities, 4 implemented the evaluation component, and 3 districts implemented the parenting component. These counts differ from those reported in the midyear implementation report (Mullen & Rogers, 1981) in that several school districts discontinued implementation of components during the year. For further discussion of regional component implementation see the midyear implementation report (Mullen & Rogers, 1981).

5. What technical assistance was provided to program participants?

Appraisal Curriculum. During 1980-81, the method by which technical assistance was offered to Outreach participants was

modified. During the 1980-81 school year, one appraisal/curriculum replication specialist was added to the Project KIDS staff to serve regional sites, leaving the two existing appraisal/curriculum replication specialists to serve teachers within the Dallas ISD.

Replication specialists made a total of 336 visits to local and regional classrooms. The average length of each visit was three hours, and ranged from ten minutes to eight hours. A tabulation of the different technical assistance activities is presented in Table 11.

The most frequently reported purpose for visits was direct assistance, though follow-up was also reported about 9% of the time. The topic of 49% of the visits was instruction, referring to the use of Project KIDS materials in developing and carrying out individual education plans. Another 20% of the topics reported were classified in the "other" category. The high frequency of this category was due mostly to the administration of the needs assessment by replication specialists. Another reason that a topic may have been coded in this category included meetings with personnel other than the teacher.

Thirteen percent of the topics listed regarded Project KIDS materials, and usually involved familiarizing a new teacher with the KIDS model. Eleven percent and 5% of the topics, respectively, were reported regarding classroom management and appraisal. Fifty-nine percent of the activities conducted were categorized as discussion. Another 16% of the activities were observation of the teacher and the class, and 9% of the replication specialists' activities involved demonstration of materials or methods.

Table 11

Tabulation of Technical Assistance Activities Conducted by all Replication Specialists[a]

Descriptor	N	Percent
Purpose		
Direct Assistance	305	90.7
Follow-up	31	9.3
Topic		
Instruction/Curriculum	167	49.7
Other (needs assessment, conferences, etc.)	68	20.2
Project KIDS Materials	45	13.4
Classroom Management	38	11.3
Appraisal	18	5.4
Type of Activitiy		
Discussion	199	59.2
Observation	54	16.1
Demonstration	31	9.2
Class Participation	18	5.9
Conference	16	4.8
Planning	9	2.7
Delivery	9	2.7

[a]Total visits = 336

Evaluation. Local implementation of the evaluation component differed dramatically from regional implementation. Locally, the evaluation replication specialists monitored the activities of other replication specialists and KIDS management with regard to model implementation. In addition to monitoring implementation activities, evaluation replication specialists planned and implemented various studies for the use of management.

During 1980-81, replication specialists conducted a local survey of teachers to determine appraisal/curriculum implementation, and collected activity records from other component replication specialists and Project KIDS management to determine the degree to which other components were implemented. Other activities included periodic updates of class rosters, generation of mailing labels for parent letters, and development of an informal parent survey for use during parent meetings.

The evaluation replication specialist assisted regional participants in developing and implementing their own evaluation plans. This assistance ranged from the development of instruments to the computer analysis of progress data on students. Of the six school districts implementing the KIDS model, five developed plans and evaluation questions. Four of these participants realized their evaluation plans. The resulting products ranged from a report of the different activities conducted, to a tabulation of student gains, to an analysis of student gains as compared to student age.

Family Involvement. All regional participants were provided with Project KIDS Family Involvement materials. Family Involvement technical assistance was offered by the Project KIDS staff, although

there was no evidence to indicate that regional participants chose to accept this assistance. Furthermore, regional participants reported that, while the KIDS Family Involvement component was used as a resource, no sites adopted it as their own program. Rather, this component was one of several resources used developing family involvement activities.

6. What demonstration/dissemination activities were conducted by the Project KIDS staff?

As presented in the midyear implementation report, Project KIDS management responded to 102 requests for information. Futhermore, as of February 1, 1981, the staff had made presentations to 18 local and regional agencies and out-of-town site visitors. The midyear report contains specific individuals and agencies served through demonstration/dissemination activities.

During April 1981 surveys were sent to the 139 individuals and agencies that had purchased dissemination packets during 1980-81. Of the thirty surveys returned, one was returned to sender and five subjects were unaware that their agencies had purchased the materials. The 24 usable surveys represented eight states in six geographical regions of the United States, and further, represented a variety of public and private agencies. The reader should note that the sample reported was comprised of a self-selected group which may have represented some bias.

The most frequently purchased packet was Curriculum (n=17), followed by Family Involvement (n=16). The Appraisal and Staff Development packets were puchased with greater frequencies (n=13 each) than the Evaluation packet (n=12). The responses of packet

users indicated that the typical individual or agency purchased three different packets.

In response to the question of their reasons for purchasing the packets, most respondents cited purchase for general resource. One respondent said that the appraisal packet was purchased to be abstracted for inclusion in an annotated bibliography of tests for infants. Another respondent expressed a desire to incorporate these resources into the infant program at her agency.

Not all respondents had had an opportunity to use the packet information. Several respondents said that packets had been made available through the agency library and that actual use was unknown. A wide range of people were also specified as having used the packets. Those persons mentioned included parents and persons at the instructional level as well as administrators and support personnel.

Those recipients who did use the packets most frequently used the material as a resource in developing their own program. Others reported that the packets were made available to all personnel for use as a general resource. No respondent reported using the material as part of Project KIDS Model Implementation.

All respondents believed that the packets had been quite useful for their intended purposes. One respondent suggested that the Appraisal packet needed to cite more information regarding standardization and the computation of developmental age. Another respondent suggested that the Inventory needed closer developmental sequencing.

Nineteen of the 24 respondents stated that the packet information had met their expectations. One respondent stated that

the activities cited were not attainable within setting, and four respondents did not answer the question. Most users felt that the packets had several positive aspects. Among the most frequently cited were that the packets were well-organized and provided valuable information.

Nine respondents had suggestions for the improvement of packets. One subject asked that the KIDS staff be more punctual in sending the packets. Several respondents suggested that the materials be bound in a loose-leaf note book for easier reference. One user suggested reorganizing assessment items by age range rather than by skill area. Another offered that spaces be printed on the inventories for the child's name, identifying information and dates of assessment.

Twenty-two respondents (92%) felt that the cost of the packets had been reasonable. Two subjects (8%) did not respond to the question. Sixteen subjects (67%) said that they would "absolutely" recommend the packets to other agencies or institutions. Six stated that they "might" recommend the use of KIDS packets.

Questions 12, 13, and 14 on the survey were structured using a Likert scale format. Within this format, a response of "1" reflected the least favorable rating, while a response of "5" reflected the most favorable rating. Question 12 asked whether respondents felt that the organization of the packets facilitated "easy use and location of information". The average response to this question was 3.8, indicating a favorable rating. The modal response to this item was "4" (n=12).

Question 13 asked whether respondents felt that the packets were valuable for the purposes they had been ordered. The average

response to this item was 4.2, and the modal rating was "5" (n=10). Question 14 asked respondents general reaction to the packet information. The average response to question 14 was 4.0, again indicating a favorable reaction to the materials. The modal response was also "4" (n=16).

Taken together, the results of this survey indicated that those users responding to the survey were generally pleased with the content, organization, and presentation of the materials. Several respondents had suggestions for improving the material which may prove useful in revision of the packets and implementation procedure of the model.

10. With what success was the Family Involvement component implemented locally?

Major reorganization in the locally implemented Family Involvement component of Project KIDS resulted in increased family participation in meetings and workshops. As described in the midyear report (Mullen & Rogers, 1981) monthly meetings were held for parents, while parent centers in each subdistrict were open during weekdays. A total of nine general parent meetings were held during 1980-81.

Informal evaluation surveys completed by parents through mid-year indicated that the meetings were indeed helpful. Parents noted that the meetings helped them develop skills and knowledge to be used in dealing with their children.

11. With what success was the Family Involvement component of the program implemented regionally?

Not all regional sites wishing to implement the Family Involvement component of the model actually did so. At midyear,

four regional school districts reported that they were intending to implement this component. At the end of the year, three of those four school districts reported some degree of implementation.

There was great diversity in the ways that different school districts implemented family involvement. In some school districts, family involvement was comprised entirely of beginning-of-year, midyear, and end-of-year conferences with parents, while another school district provided additional parent group meetings and visiting periods during the school day.

Summary and Conclusions

Project KIDS Outreach served 516 students during 1980-81 in 49 local and 14 regional classrooms. This figure represented an increase of 8.4% over midyear counts and an increase of 35.4% over the number served during 1979-80. The demographic make-up differed from 1979-1980 totals, with 63.6% males and 48.3% White students. The most frequently cited primary handicapping condition remained language/learning disabled (30.2%), followed by educably mentally retarded (24.8%).

Throughout the course of Project KIDS model implementation the number of local and regional classrooms, as well as the number of students served, increased. To date, 1,511 students have received services in the various classrooms. Since some students continue participation from one year to the next, this number may be somewhat inflated. When federal funding was initiated in 1978-1979, the number of students served increased 164%. In the following two years, under

continuation funding, student populations increased 25% and 21%, respectively.

Teacher implementation of the appraisal/curriculum component of Project KIDS was below standard all year. While all teachers used some elements of this component, no teacher implemented all elements of appraisal/curriculum properly. The most frequently observed deviations from standard implementation were inappropriate administration of the KIDS Inventory and nonuse of MAPs.

During the first year of federal funding, three regional school districts chose to participate in the Project KIDS model. These three school districts have chosen to continue participation throughout the two years of continuation funding. In 1979-80, two additional school districts opted to implement the KIDS model, and one of the two districts chose to continue participating during 1980-81. Two new school districts were added during 1980-81, bringing total number of participating regional school districts to six. All six regional school districts had planned to continue participation in 1981-82 if federal funding were to continue.

Provision of technical assistance to local and regional participants was greatly improved during 1980-81. One appraisal/curriculum replication specialist was added and assigned solely to serve regional participants, leaving the two existing specialists to serve local participants. The replication specialists made a total of 336 visits to local and regional classrooms. A midyear survey indicated that local and regional teachers were pleased with the assistance of the replication specialists. Although teachers reported that they had benefitted from appraisal/curriculum technical assistance, classroom observations

indicated no improvement of appraisal/curriculum implementation over previous years.

Unlike the services of the appraisal/curriculum replication specialists, services of the evaluation and family involvement replication specialists were provided entirely on request. The evaluation replication specialist provided assistance to local project personnel by updating class rosters, generation of computer information, and the development of an informal parent survey. Regionally, the evaluation replication specialist assisted program personnel in the development and implementation of evaluation plans. The family involvement replication specialist provided regional participants with Project KIDS family involvement materials and was available to provide assistance with component implementation, though there was no evidence to indicate that participants chose to accept this assistance.

Project KIDS management conducted a variety of demonstration/dissemination activities during 1980-81. A survey of dissemination packet users revealed that users were generally pleased with dissemination products. Typically packets were purchased as a general resource. No users reported implementing any program component per se.

Implementation of the local Family Involvement component was greatly improved since 1979-1980. Nine monthly parent workshops were regularly attended, and parent centers in each of five local subdistricts were available to parents each weekday. An informal survey of parents indicated that they found the workshops and parent centers useful and beneficial. By the end of the 1980-81 school year, three regional school districts reported having implemented a family involvement program.

There was great diversity in the degree of implementation reported, and there was no evidence that Project KIDS materials had been used in implementation.

On the whole, 1980-81 was a successful year for the management of Project KIDS Outreach. Staff reorganization and addition of personnel resulted in a more parsimonious service delivery network. While staff duties were more clearly defined and more easily available to participants, the instructional component of the model did not improve. Particularly noted as being below standard were classroom implementation of the Appraisal/Curriculum component both locally and regionally, and implementation of the Family Involvement component regionally.

Evidence from teacher interviews and reaction questionnnaires suggests that teachers were unaware of the requirements for standard implementation. Hence, Appraisal/Curriculum implementation may be improved possibly through more rigorous orientation of participants. Intensive orientation of regional participants also may provide incentive for standard implmentation of Family Involvement.

References

Mullen, M., & Rogers, A. Midyear implementation report of the Project KIDS Outreach (SE81-117-51-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, January 1981.

Additional Information

Mullen, M., Gilliam, D., & Rogers, A. The evaluation of the 1979-80 implementation of the KIDS model program (SE80-116-31-08). Dallas, Texas: Dallas Independent School District, October 1980.

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LONGITUDINAL EVALUATION OF EDUCATION FOR HANDICAPPED INFANTS

Literature Review of Infant Education and Research Strategy

SE81-119-72-05

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Dallas, Texas
July 1981

SE81-119-72-05

Longitudinal Evaluation of Education for Handicapped Infants

During the 1975-76 school year, the Dallas Independent School District began implementation of a federally funded program, Project KIDS, offering early intervention education to handicapped infants and their families. Annual reports on the progress of this program have indicated that students served in this program were indeed making progress. The purpose of the proposed study is to investigate the long-range effects of Project KIDS. One objective is to delineate specifically which services have been provided to children and their families. Another objective is to determine the gains made by children served in the program. A final objective is to determine the long range effects of intervention, or rather the extent to which student gains are sustained once Project KIDS intervention has ended.

As a prelude to the longitudinal study, the present literature review investigated the status of infant education, methodologies used in the research and evaluation of intervention programs, and findings of such studies. The following questions were addressed:

1. What are the historical bases of early intervention programs?
2. What are the current trends in this area?
3. What programs have been developed to serve the population?
4. What methodologies have been used in investigating early intervention programs?
5. What were the results of previous investigations?
6. What variables have been associated with program success?

Design of the Literature Review

The primary goal of the social sciences, indeed of all sciences, has been to expand the current knowledge in that discipline by developing and testing new hypotheses, then to communicate those findings to others. The logical first step of this process has been to review that literature which had preceded the envisioned study. Such a review should have critically evaluated the literature, and established a basis for the envisioned study which would reduce past mistakes and/or more appropriately address the topic.

Jackson (1980) pointed out that while reviews of research have been a fundamental activity in any scientific discipline, there were very few resources available on methods and techniques for conducting and writing reviews. The author surveyed a sample of general methodology books in sociology, psychology, and education, and found that few provided any specific or systematic explanation of methods for reviewing literature.

Jackson suggested that the purpose of a literature review was two-fold. The first purpose was to present information relevant to the topic as a means of "building a case" for the envisioned study. Secondly, a literature review should have provided a representative selection (sample) of all materials on the topic, critically analyzed this material, then resynthesized the material. The goal of this exercise was to further complete the store of knowledge on the topic and discover new directions for further study.

Little has been published with regard to a standardized or accepted method of conducting literature reviews. Three sources were located, however, which dealt with the methodology of conducting literature reviews. Several articles were located which demonstrated a systematic method of review, although the strategy of the method was not discussed.

One article (Light & Smith, 1971) suggested secondary analysis of data relating to a single topic. Using this paradigm, data from various studies were treated as a stratified sample, then analyzed for main effects and interactions.

Glass and Lee (1979) recommended also that analysis of previous research be conducted as a separate, though complete, investigation. Using this "meta-analytic" approach, findings of individual studies are transformed into common, metric variables, such as socioeconomic status or duration of treatment. An estimate of each study's sensitivity to confounding variables, as well as an estimate of the internal validity of the design, is also calculated. Univariate or multivariate analyses are then used to obtain a standardized measure of the findings.

Jackson (1980) points out that the meta-analytic approach has several strengths, including that it is one of few systematic methods of analyzing literature. Other strengths of the method are that it has some degree of control for design flaws in the studies reviewed, can provide estimates of population parameters, and can study the relationships among different characteristics of the studies analyzed.

Despite these advantages, several disadvantages cannot be overlooked (Jackson, 1980). First, the meta-analytic approach can assess only relatively direct evidence on a given topic; it cannot integrate evidence across sets of studies on related topics. Second, this approach cannot be used to infer causal relationships among characteristics and the different results of the studies surveyed. A third disadvantage of the method is that there are no standards for sample sizes when performing multivariate statistics on the studies reviewed. The fourth limitation of this method is that there is no consensus as to whether a set of studies on a topic should be considered a universe or a sample. Since

there are no standard common metrics for the different measures across studies, a fifth limitation is presented. The lack of valid and reliable coding methods of the studies is a sixth disadvantage of the approach, and Jackson raises the question of whether the method provides adequate controls for design flaws in the studies reviewed.

In accordance with Light and Smith, and Glass and Lee, Jackson contended that most reviews fulfilled only the first purpose: building a case for the study. As a means of approaching integrative reviews with the objective of broadening the knowledge of the topic, the author suggested that the literature be investigated using the components of the scientific method. The literature survey then became a miniature investigation within the larger structure of the proposed study.

Using the format proposed by the American Psychological Association (1974), the literature survey became the introduction to the larger study and incorporated the components of the scientific method in the following ways.

I. Introduction. This section comprises an overview of the topic to be investigated. This component needs to introduce briefly the topic and identify the direction it will take. At this time the question or questions under investigation are introduced.

II. Method. This section involves the process of selecting and examining those materials which will be surveyed.

   A. Identification. The population of materials on the topic is identified. This task is accomplished through computer bibliography searches and the use of indexes to professional publications and accessioned materials. It is important at this stage to delineate clearly those methods used in identifying as much relevant material as possible.

B. Sampling. Unless the amount of information on a given topic is very small, it is usually not necessary to review each and every work available. Rather, the investigator should access as many materials as possible, then choose as his sample a selection of materials which best represent the different theoretical and methodological frameworks used to approach the topic. As in the identification process, it is important to outline the sampling method used, including the criteria used in determining the representativeness of a study selected for review.

One confounding variable in the process of sampling the literature is the availability of materials. Exclusion of sampled materials from the review may bias the analysis of the "state of the art." It is therefore critical to identify the channels used in acquiring materials, and reasons encountered for unavailability.

C. Analysis of the Data. Once the sample of articles has been located the investigator should employ a systematic method of reviewing each article. Jackson suggested that a checklist be used to identify characteristics present in each article. Such a checklist would provide the reviewer with a standard set of criteria to be investigated and would thus allow a more objective means of review.

While the checklist method is very useful, it is sometimes difficult to predict at the outset those criteria which will be most relevant. Another method might be to list for each article those variables investigated, the analyses used, and the results derived.

III. Results. The results section draws together those materials which have been examined to provide a more comprehensive view of the topic. This section should parallel the scientific study in presenting measurable, objective information drawn from the sample. In the instance of an integrative literature review, the results section should present the issues historically related to the topic, and the methods used to address these issues. The significance of variables investigated and the conclusions drawn from these studies should be presented also in this section.

IV. Discussion. This last section is in fact the integrative review of the literature. Whereas the previous sections have dealt with the identification and treatment of a sample, the discussion section provides the reader with information generalizable to the "state of the art" of the topic.

The discussion section draws together the information presented in the results section, integrates these findings, and draws new inferences and conclusions. The goal of the discussion section is to create a synergistic effect, drawing together the reviewed literature as parts of an integrated whole. The writer should carefully document each source contributing to or supporting his or her inferences.

Method

Identification

The literature for this review was surveyed using several sources. One source used was local public and university libraries where Psychological Abstracts, Education Index, Educational Resources Information Center (ERIC) Index, and card catalogues were available. Descriptors used in surveying these sources included: child development-handicapped, early intervention, education for the handicapped, exceptional children and youth, families of handicapped children, handicapped infants and children, infant education, longitudinal methodologies, and rehabilitation. Materials obtained through public and university libraries included journal articles, books, and some conference proceedings. When certain materials were not locally available, they were obtained through the interlibrary loan department of the public library or through our second source, the professional library of the Dallas Independent School District's Department of Research and Evaluation.

The professional library conducted computer searches of all materials available to the District using the aforementioned descriptors. In addition to obtaining bibliographies with abstracts, the professional library was able to obtain accessioned materials not available through other sources.

The third source used to identify the population of materials regarding early intervention and longitudinal methodologies was the Region X Education Service Center (ESC) in North Central Texas. Through the ESC, the author obtained further computer bibliographies and abstracts, this time through the Coordinating Information for Texas

Educators (CITE) Network. The ESC also acquired materials available through CITE as well as the use of microfiche equipment when necessary.

Sample

The population of documents identified using these sources and descriptors were referenced as being in psycnological and educational journals, books, conference proceedings, government reports, and unpublished accessioned documents. A complete listing of all identified documents is presented in Appendix A.

Since there was not a great deal of material on the evaluation of early intervention, the author attempted to locate all those materials which had been identified. Time constraints made it impossible to locate all available documents. These limitations applied mostly to those materials identified through computer searches. Regardless of the source, a computer search requires about ten days for completion, then another three days to relay the bibliography to the person requesting it. Once the search is completed and delivered, another ten days is required to obtain accessioned documents identified in the bibliography.

Several of the documents located regarded a single project, and were periodic follow-up reports of the project. In this instance, since each report discussed the previous reports of the project, only the final report is fully reviewed herein. Previous reports of the project have been used as references only when needed to clarify information. A total of 25 documents were located, representing a success rate of 67.6%.

Analysis

An initial overview of these documents indicated that they could be categorized into five major categories. Table 1 presents the categorization of the sample. The first category, commentaries,

Table 1

Categorization of Documents Sampled
(N=25)

Commentaries	Literature Reviews	Methodologies	Child-centered Programs	Parent-Inclusive Programs
Bricker (1978)	Bronfenbrenner (1974)	Gray & Klaus (1970)	Gray & Klaus (1970)	Karnes et al. (1970)
		Lynch (1976)		
Menolascino (1979)	Lazar & Darlington (1978)	Shapiro, et al. (1977)	Cornett et al. (1974)	Warfield (1975)
	Mordock (1979)	Cornett & Askins (1978)	Palmer (1977)	Lynch (1976)
		Macy (1978)		Rogers (1979)
	Schaefer et al. (1980)	Walzer et al. (1978)	Cornett & Askins (1978)	Barna et al. (1980)
		Rogers (1979)		Field et al. (1980)
	Farran et al. (1980)	Bagnato & Neisworth (1980)	Education USA (1980)	Mullen et al. (1980)
		Simeonsson & Huntington (1980)		

included those articles in which the author stated conclusions without the support of cited research. The second category, literature reviews, was comprised of those articles in which the primary intent was to review pertinent literature. Those studies in which the review was an introduction to the report of a study were not classified as literature reviews. Literature reviews were not necessarily integrative or analytical. Articles included in the third category, methodologies, were those which presented in some detail a specific research design. The criteria for inclusion in this category were that the authors must have indicated specifically the subject selection procedures, data collection methods, instruments used, and analyses performed. This category frequently overlapped with the fourth and fifth categories, since those publications on programs were frequently reporting on their success.

The fourth category, child-centered programs, included those programs which dealt only with the child, and did not consider parent participation as a component of intervention. Finally, those programs in which parent participation was considered a component of the intervention strategy were categorized as parent-inclusive programs. The degree of parent participation across programs varied, but in all cases a method of measuring parental variables, as well as the results, was reported.

Since all documents were not located, and since all those located were included in the sample, the representativeness of the sample was unknown, and therefore at risk for bias. Two of the documents located for the sample presented surveys of pertinent literature and discussions of the range of variables expected throughout the literature. The authors of these articles stated their confidence in the representativeness of their samples. Since many of the documents for this present study were the same as those identified by Bronfenbrenner

(1974) and Lazar and Darlington (1978), and since no remarkably different documents were identified by any sources, it was concluded that this sample accurately represented the domain of literature on this topic.

Results

The documents located and included in the sample were analyzed chronologically by category. Each study was viewed with attention to the age groups and instructional settings studied. Also noted were the particular methods used, and which combinations of age group and instructional setting yielded significant performance of experimental groups over control groups.

Commentaries.

Two articles (8%) were categorized as commentaries. Bricker (1978) commented that the criteria frequently used in determining the success of a program may be inappropriate. Since differences in handicapping conditions create variability in performance, it may be impossible to create objective criteria which are possible to measure. Rather, Bricker suggested that the success of early intervention programs be assessed in three areas: (a) progress toward developmental milestones, (b) development of appropriate social behavior, and (c) increased family involvement. Progress would then be measured as a difference between the observed and expected performance for each child. In the evaluation of success, Bricker suggests addressing several questions.

1. Were fewer clients institutionalized?
2. If any clients were institutionalized, did this occur significantly later than for those subjects not participating in early education programs?
3. How well did program participants adjust socially?

4. Did fewer families of participants suffer serious disruptions or stress than those of non-participants?

Bricker's attitude appears to be one of assessing long-term outcome, with particular emphasis on the practical aspects of success and performance.

Assessment of child progress is not the only consideration of program success. Manolascino (1979) held that social service agencies face a challenge in coordinating and delivering services to the handicapped. He suggested that agencies form a network of preventive, remedial, and support services for the handicapped. The author further expressed the view that the need for support services would be reduced when preventive and remedial services were efficient.

Literature Reviews.

Five articles fell into the Literature Reviews category. The quality of these reviews was typically good in that they appeared to treat their topics thoroughly. Two articles, by Bronfenbrenner (1974) and Lazar and Darlington (1978), were considered very good. This assessment of the quality of these two reviews was given because the authors analyzed the material using a method similar to that described by Jackson (1980). Lazar and Darlington also went further and statistically analyzed studies using methods similar to those described by Glass and Lee (1979).

For reasons to be discussed in this section studies regarding handicapped children, and economically disadvantaged children have been considered as one group. Briefly, there are several similarities between the two groups. Although most children in either group demonstrate no organic brain damage, both groups tend to lag far behind their chronological peers on cognitive measures. Several investigators have attributed this finding to disruptions in the developmental sequence.

Bronfenbrenner (1974) investigated follow-along data of seven early intervention programs to determine the practical effectiveness of such programs. There were five questions under investigation:

1. Do children in experimental early education programs continue to gain in intellectual development as long as the intervention continues, or do they at least maintain the higher level achieved in the initial phase?
2. Do children continue to improve, or at least to hold their own, after termination of the program, or do they regress to lower levels of function once the program is discontinued?
3. Is development enhanced by intervention at early ages, including the first years of life?
4. In terms of long-range impact, what kinds of programs are most effective?
5. Which children from what circumstances are most likely to benefit in the long run from early education programs?

In his article, Bronfenbrenner reviewed two types of programs: group intervention (typically center-based) and individual, home-based intervention. Children participating in group intervention made substantial gains during the course of intervention. However, after program termination, no participants continued to make greater gains than controls. In fact, after program termination, participants' gains declined in relation to control groups to non-significant differences. The most pronounced declines appeared in those studies with socially and economically disadvantaged children, a finding which suggests regression to the mean on measures of cognitive performance. Age did not appear to affect performance significantly. Those children entering group programs before age three did no better than those children entering at later ages.

Bronfenbrenner stated that the lack of sustained gains may not have been due to the nature of group programs per se, but rather may have had a basis in the environmental characteristics of the children. The greatest declines were found in children from socially and economically deprived homes. Variables found to be relevant to decline in performance included number of children in the family, employment status of the head of household, education level of the parents, and the presence of only one parent in the family. The author cited evidence which indicated that 80% of the variation in academic performance between economically advantaged whites and children from non-white families was due to changes occurring from May to September, during the summer months. During this time, white children from advantaged families remained at their academic level while children from disadvantaged environments tended uniformly to decline in performance. While these findings suggested that the answer to declining academic performance is to provide individual, home-based intervention, Bronfenbrenner stated that programs with these two characteristics alone did not produce the expected results.

Children aged 0-2 years participating in home-based programs typically made substantial gains and sustained this improvement three to four years after termination of intervention. Control groups in these studies also sustained gains in IQ scores. Bronfenbrenner suggested that, again, environmental and family variables played a large part in the progress of these children. The families participating in each of these programs were volunteers. Bronfenbrenner suggested that, because these families were a self-selected sample, they may have reflected a bias which favored their children's progress. Other factors mediating the children's outcomes were that families were from less disadvantaged

backgrounds, that intervention began with younger children, and that these programs emphasized one-to-one interaction between child and adult.

Interaction between child and adult surfaced as an important variable. Specifically, those programs in which children made the greatest gains were those which directly involved the mother in the educational process. Bronfenbrenner proposed that intervention of this sort was most effective because it occurred within the context of the strong emotional bond between mother and child. Not only did the child benefit from educational intervention, but also benefitted from an enhanced interpersonal relationship with his mother, which was reinforcing because of the structured activities of intervention. As the author stated: "Since participants of the program remain together after intervention ceases, the momentum of the system insures some degree of continuity for the future" (p. 292).

The findings of family-based programs indicated that mother/child intervention is most effective when the child is two years old. Gains decreased with older children. Children from family-based programs also sustained gains over time, and tended to retain the ability to benefit from intervention regardless of the type of later intervention.

Bronfenbrenner drew these findings together and suggests three principles of intervention:

1. The family is the most effective system through which to approach intervention.
2. Intervention should provide support services for the family to remove some of the external limitations on their parenting abilities.
3. Intervention programs should be long-term and assist the parent and child from prenatal care through adolescence.

The results of Bronfenbrenner's analysis indicate that many variables affect the outcome of a given instructional program, particularly if that program is of a developmental, rather than academic, nature. Among the variables identified by this source are the location of service delivery when age has been considered. Another variable affected by the child's age was the degree of parental involvement. A final variable which appeared to hold regardless of age was socioeconomic background.

In a study conducted under the supervision of Lazar and Darlington (1978) the Consortium for Longitudinal Studies compared a number of early intervention programs which had comparable follow-up data. The consortium investigated the effects of preschool on later school performance and on attitudes and values. They further analyzed the available data to determine whether certain programs were more effective than others, and whether program effectiveness varied as a function of student characteristics.

Twelve early intervention programs were compared in this review. Results of the studies were combined and averaged before testing any hypotheses. This method was used as a means of equating the results of the studies and reducing the probability of misrepresented data. In these respects, the method was similar to that discussed by Glass and Lee (1979).

The result of the analyses of the programs indicated strong support for early intervention programs. Children aged 3-5 years who participated in group, school-based intervention programs later performed significantly better in school than controls. The variables investigated regarding school performance were assignment to special education classes, retention in grade, achievement test performance and intelligence test performance.

The percent of children from each program assigned to special education classes ranged from 2% to 23%, compared to the placements of controls, which ranged from 3% to 54%. The percentage of preschool participants who were retained a grade ranged from 4% to 52% whereas the percentage of controls who were retained ranged from 0% to 69%. Preschool treatment groups performed significantly higher on mathematics achievement tests than controls. On reading achievement tests, treatment groups scored higher than controls, but this finding suggested a trend rather than a significant difference. The Consortium also found that treatment groups obtained significantly higher scores on standardized intelligence tests than did controls, and sustained this superiority for at least three years after program termination. Long-range effects of cognitive performance gains appeared to have been maintained.

A structured interview procedure was used to assess parent and student attitudes and values. Children who attended preschool were more likely than controls to demonstrate achievement-oriented attitudes and values. Parents of preschool participants had higher vocational aspirations for their children than did parents of control children.

Five variables were cited as being predictive of successful outcome. These variables were: (a) age at entry into the program, (b) number of home visits, (c) program goals for parents, (d) degree of parent involvement, and (e) number of children per adult. Taken together, these variables indicate that "...the most effective programs involved one instructor working with an infant or toddler and his/her parent in the home" (Lazar & Darlington, 1978; p. 52).

The efforts of Lazar and Darlington did include some of those social variables indicated by Bronfenbrenner. By investigating student characteristics in addition to academic performance, the authors

concluded that early intervention programs at the preschool level appeared to produce effects which impacted areas other than academic achievement. Most prominent among these areas were social adjustment and parent attitudes.

Mordock (1979) summarized literature regarding the psychosocial development of handicapped children. This review presented no discussion of the methods used in selecting articles for reviews, or of the representativeness of the sample.

The author cited research supporting the existence of a developmental sequence beginning with attachment behaviors and progressing through the separation-individuation phase of development. In the course of normal child development, attachment develops as a result of an interaction between the mother and child. Through various signaling behaviors and physical contact, the child demonstrates attachment and elicits responses from the mother. Mordock pointed out that many handicapped children lack the behaviors that can demonstrate attachment and elicit parental response. These limitations in the child's abilities also limit the possibilities for parent-child attachment.

Locomotion is the central activity of the separation-individuation phase, in which the child develops a sense of constancy about his mother. Once the infant can recognize his mother, he can then leave his mother and go to explore this world. When in need of comfort, the infant calls upon his image of mother. Although the infant is able to call upon an image of his mother, it is still necessary to be able to periodically approach her for emotional refueling.

The normal child uses all of his faculties to progress through attachment and separation-individuation. The handicapped child does not

have all those resources available to him and thus cannot progress through this phase under normal conditions. Even if the handicapped child is able to form a maternal attachment, he is likely to experience considerable difficulty in progressing through separation-individuation. Mordock cited several investigations which support his thesis. These studies indicated that handicapped children demonstrate a higher incidence of emotional difficulties, which range from immaturity to psychiatric disturbance.

Mordock further stated that the majority of programs serving handicapped infants and children do not address the realm of psychosocial development. He suggested that program success could be improved if more emphasis were placed on psychosocial development, particularly attachment and separation-individuation.

In their treatment of literature on infant stimulation, Shaefer, Hatcher, and Barglow (1980) provide further support of Mordock's theory. According to Schaefer et al., brain tissue has a potential which must be activated by sensory input. In translation, the normal child has intact nervous and sensory input systems and can use his physical experiences and environmental input for cognitive and physical skills development. In contrast, the handicapped child is impaired in such a way that he cannot make use of many of the experiences available. The handicapped child's impairment may range from an "at risk" status due to low birth weight, prematurity, or socioeconomic disadvantage, to demonstrated physical disability, to profound organic retardation of mental processes.

Farran, Haskins, and Gallagner (1980) further endorsed the concept of environmental retardation. The authors suggested that mental retardation in the absence of discernible organic damage is "...virtually specific to the lowest social classes and their cultural setting"

(p.48). Environmental retardation is a result of the limited resources and experiences of children from low socioeconomic backgrounds. According to Farran et al., the developmental delays of these children appear in infancy, with slowed development or declining progress in comparison to norms. As a result of their delays relative to norms, particularly in cognitive and affective areas, children from disadvantaged backgrounds are found to be overrepresented in special education programs.

In the United States, the relationship between socioeconomic status (SES) and retardation is complicated by the relationship between ethnic status and social class. Results of several surveys cited by Farran et al. indicate that non-white ethnic groups, particularly blacks, are overrepresented in both low-income categories and in programs for the mentally retarded.

Farran et. al. suggested that the higher incidence of retardation in low SES groups may be a result of many variables. In particular, low socioeconomic groups may be prone toward poor medical care, especially prenatal care. The family dynamics are often such that the child also experiences a deprived psychological environment. Familes in low socioeconomic groups tend to have more children, spaced more closely. Low-income mothers are also believed to provide a poorer environment for the development of linguistic and social skills.

Farran et al. suggest that nonorganic retardation can be reversed through intervention at the familial level. The authors cite several studies which indicate that children attain and sustain the greatest gains when intervention includes the mother. The authors suggest that intervention can be even more effective if begun at the societal level, improving social services for low-income families, and educating women before the[illegible]ave children.

Several conclusions appeared to emerge from the literature reviews sampled. Children from low socioeconomic backgrounds and children who have physical disabilities tend to lag behind their chronological peers on cognitive measures. In turn, these children have been found to be overrepresented in special education and other special service programs. Several investigators have theorized that, because of deprived environment or physical disability, the child cannot follow a normal developmental sequence of physical, cognitive, and emotional development and hence, lags behind his or her peers.

Reviews of studies regarding early intervention have suggested that intervention can be effective in promoting developmental gains and in helping children sustain these gains once intervention has terminated. While these studies indicated the potential for success, the varying characteristics of each study appear to affect the continuity of findings. Prominent among these are demographic and parental characteristics and also nonacademic measures of outcome.

Methodologies

Nine articles (36%) were located and reviewed which addressed methodologies for evaluating early intervention programs.

Gray and Klaus (1970) conducted a follow-up of children participating in the Early Training Project in Nashville, Tennessee. The study they reported was of an intervention program conducted over three years, and of an additional three-year follow-up period. The method described by the authors was the Equivalent Time Series Design combined with the simple Time Series Design (Campbell & Stanley, 1963), and may be diagrammed as follows:

R 0 X_3 0 X_4 0 X_5 X_6 0 0 0

R 0 X_1 0 X_2 0 X_3 0 X_4 0 X_5 0 X_6 0 0 0

R 0 0 0 0 0 0 0 0 0

Where: 0 = test

X_i = intervention

R = Randomization

Because the subjects were followed up over a period of years, and because subjects were randomly assigned to treatment and control groups, this experimental design may be considered to have controlled most sources of invalidity.

In assessing involvement and attitude change in parents, Lynch (1976) advocates the use of a parent survey administered on a regular basis (the author administered the survey at six-month intervals). An analysis of variance may be used to determine changes in parental involvement and attitudes over the period of intervention.

At the Infant Program of the Institute of Rehabilitation Medicine in New York, anecdotal records describing the behavior of each child were maintained by teachers (Shapiro et al., 1977). An elaborate coding system was used to insure the reliability of teacher reports. The coding system addressed eight dimensions of motoric and interpersonal behavior. The authors found that the coding system and log book methodology demonstrated significant reliability for inpatient students.

Cornett and Askins (1978) suggest using a secular trend methodology in investigating the long range effects of early intervention. According to this method, a trend line is plotted, using a method of least squares, to predict long-term performance of participants. Follow-up data were then plotted against the trend line, and comparisons made between the

observed and predicted values. The use of this method is also supported in the aforementioned article by Bricker (1978).

In addition to the predicted and observed scores on student variables, the authors investigated school records to determine how many students had entered regular education classes or had required special services. Teachers were surveyed also as a source of data: they were asked to rank program participants with classmates on several variables.

One method of equating experimental and control groups is to use each experimental subject as his own control (Tjossem, 1974). Using this theoretical control group methodology, experts estimate the expected progress of each child when no intervention is provided. By using this methodology, one experimental confound and one ethical issue can be reduced (Macy, 1978). First, experimental confounds due to individual differences among handicapped children can be greatly reduced. Since the same children who comprise the experimental group also comprise the theoretical control group, virtually all possible confounding variables are controlled. Another advantage of the theoretical control group is that it can eliminate the ethical issue of denying available services to a client (in this case, the handicapped child and his parents).

Macy (1978) reported a study in which five child development experts were used to estimate the expected developmental progress of the subjects if no intervention was provided. Developmental progress was estimated using scores from chronological age-appropriate developmental inventories. Analysis of these estimates indicated significant reliability among the experts (Macy, 1978; Rogers, 1979).

Bagnato and Neisworth (1980) suggest a method of analyzing student progress in accounting for program effectiveness. The authors refer to this as the Intervention Efficiency Index (IEI) and is defined as:

$$\frac{\text{Developmental Gain (months)}}{\text{Time in Intervention (months)}} = \text{Intervention Efficiency Rate.}$$

This index can be computed for several purposes. Individual indices can be computed, or a group index can be computed. Also, separate indices can be computed for each area addressed by the program, or all scores can be combined in such a way as to yield an index of global gains.

The single greatest advantage of the IEI is that it permitted the comparison of several different performance scores. The index also provided a measure of program effectiveness based on duration of intervention. The authors stated several cautions in using the IEI. First, the authors stated that the Index should not be used as the sole criterion of program success. The IEI should be used as an indicator of the efficiency of the match between a child's needs and the services provided. Since the Index was based on gain scores rather than direct measures of progress, the user must bear in mind that error sources inherent in this method have not been controlled.

Simeonsson and Huntington (1980) suggest still another method of assessing child progress. Consistent with the authors previously cited, Simeonsson and Huntington believed that assessment should include areas not typically addressed using traditional instruments. The authors believed that behavioral and temperamental measures were an important indication of progress, and were related to chronological development.

To assess infant behavior and temperament, the authors developed the Carolina Record of Infant Behavior (CRIB). Use and analysis of this instrument indicated that the instrument was reliable in assessing behavior and temperament, and also that it was sensitive to the differences in these characteristics in handicapped children. The CRIB was demonstrated to distinguish between children based on primary handicap.

As indicated in the literature, several methodologies were found to be useful in the evaluation of early intervention programs. These methods have ranged from anecdotal records of activities and observed improvement through simple time series and more complicated regression analyses. Anecodotal information is frequently not reliable or quantifiable. Trend analyses and regression analyses are often not accurate because the development of handicapped children varies so much that individuals are not comparable.

To address this difficulty, several investigators have suggested the use of each child as his or her own control. Preliminary investigations of this method have found that a theoretical control group methodology was reliable in providing a viable reference for child progress. Once child progress has been determined, another method may be used to determine the efficiency of a program in effecting the change.

Child-Centered Programs

Six sources were located regarding programs which centered around child progress. These programs did not provide intensive training for parents. Two of the programs outlined here were also included in the Methodology section since the authors presented unique, well-documented methods of assessing program effectiveness.

Gray and Klaus (1970) reported the long-range progress of children participating in the Early Training Project in Nashville, Tennessee. The objective of this program was to attempt to offset the progressive retardation of children from deprived socioeconomic backgrounds. The intervention was conducted for ten weeks each summer for three years. The program addressed two areas: attitudes relating to achievement and aptitudes relating to achievement. In developing attitudes relating to achievement, project staff concentrated on developing interest in school-type materials, and on persistence and delay of gratification.

The staff also dealt with parental attitudes toward school achievement, though intervention in this area was limited.

For the sake of evaluation, children were tested prior to each summer session as well as after. Annual follow-up testing was conducted for three years after intervention ceased. To control for validity, two control groups were used. The local control group received all tests but no intervention, thus controlling for errors due to instrumentation and subject maturation. The distal control group also received testing but no intervention, thus further controlling for the spillover effects between the local groups which was due to proximity.

Initially, program participants demonstrated significant cognitive gains over controls. These gains then leveled off and finally declined slightly once intervention was terminated. At the end of the third follow-up year, the differences between experimental and control groups were still significant.

Cornett, Ainsworth, and Askins (1974) reported on an early intervention program which sought to enhance intellectual ability, language facility, and self-image. The participants in the program were preschool-aged Spanish-American children who were diagnosed as being "at risk" due to family background, language disability, physical handicaps, or low birth weight. Pretests and posttests measured mental ability, English-language facility, and Spanish-language facility.

Results of testing indicated that those children participating in the intervention program demonstrated significantly greater gains on mental ability and English-language facility measures than did controls. Participants also made greater gains on Spanish language than did controls; however, this gain was not significant.

A study of the long-range impact of the same program was conducted later (Cornett & Askins, 1978). The authors used a method of secular trend analysis to compare actual performance with expected performance. Results of follow-up scores and survey data indicated that program participants were performing satisfactorily in regular school settings. Teachers rated these students as falling in the middle to upper one-third of their classes in academic performance, social adjustment and overall school performance. While the growth in English-language ability was less than expected, Spanish language ability did begin to show an increase. As supported by other studies then, early intervention appeared to impact social adjustment and nonacademic variables as well as academic performance.

Palmer (1977) presented results of the impact of the Harlem Research Center Preschool program. The program served 310 black preschool boys. Parents were encouraged to visit and observe the center, although no more specific services or activities were offered to them. The children were divided into three groups: one group, the Training group, received the preschool intervention, the Discovery group received non-directive preschool, presumably to control for Hawthorne effects, and finally, a control group.

Prior to and following intervention, the children were tested on a variety of cognitive, motor, and perceptual performance measures. When the program participants were in the fifth grade, follow-up results revealed that program participants obtained significantly higher scores on cognitive measures than did controls. Furthermore, only 22% of the participants were behind grade level while 45% of the controls were behind grade level. No results of more specific motor or perceptual performance were reported.

Palmer (1977) also reported on the effects of the Perry Preschool Project in Ypsilanti, Michigan. This was a cognitively oriented program targeted toward economically disadvantaged children. Assessments at program termination indicated that program participants sustained a significant twelve-point difference in IQ scores over controls. Follow-up testing one year later revealed no significant differences in IQ scores.

The Perry Preschool Project was completed in 1980, and found through repeated follow-up testings that the preschool did in fact have an effect. Education USA reported that by age 15, those children who had participated in the preschool, demonstrated academic performance one grade level ahead of controls. Of program participants, 19% had received special services by age 15, while 39% of controls had received special services. Thirty-six percent of the participants were considered behavior problems, while 52% of the control group members were considered behavior problems. Participants' parents also reported more satisfaction with their childrens' performance than did controls' parents. Again, the program effects which remained most prominent at follow-up were social and behavioral variables in addition to academic variables.

Child-centered intervention programs appear to present potential for effectiveness. Participants of all programs demonstrated initial gains, but the permanance of these gains varied: participants of some programs ceased to demonstrate gains after intervention ended, but other participants sustained gains for over ten years after intervention terminated. This variability among findings suggested that the characteristics of each specific program, rather than the fact of intervention per se, produced the results. Another indication is that the programs' effects impacted areas that were not included in outcome measures.

Parent-Centered Programs. The final category, Parent-Centered Programs, was comprised of six articles, and represented 20% of the sample. Not all parent-inclusive programs have been based on the premise that the parent, not the child, should be the target of intervention. Rather, these programs have ranged from casual, though documented, parent participation to those programs dealing primarily and intensively with the parent.

Karnes, Teska, Hodgins, and Badger (1970) reported the results of one program which dealt intensively with the parents. Mothers of infants between the ages of 12 and 24 months were recruited from an economically depressed urban area to participate in the program. Mothers were paid to participate in the program, and transportation was provided. Under the assumption that parent progress would in turn affect child progress, the children were assessed on several cognitive measures. The intervention consisted of activities which taught mothers to train their children, and group meetings to provide support among the mothers.

While no standardized measures of parental change were reported, the authors did report that, over the course of intervention, mothers took on more responsibility in group participation, and also in community involvement. The authors suggested that such involvement indicated improved self-confidence among the participants.

Standardized test scores of program participants' children and matched controls indicated that participants made significantly greater gains in cognitive areas than did controls. Participants' children were then compared with a group of sibling controls. Again, participants' children obtained significantly higher scores on cognitive measures, this time higher than those of the matched controls.

Another program provided parents of mentally retarded children with an education program in addition to the services provided to the children (Warfield, 1975). Parent participation was required as long as the children received services. After at least two years of participation, mothers were asked to complete a Likert-scaled questionnaire. Responses to the survey indicated that the parent education program had been helpful in teaching mothers to understand their children's handicaps. Furthermore, the program provided personal support to the mothers in dealing with their children, and helped them understand the disruptions that exceptional children can create in the family.

Lynch (1976) stated that parent progress, as well as child progress, must be used to measure program effectiveness. In this early intervention project, parents were trained as treatment givers to their children. Parents were trained to work with their own children, but were also involved in the evaluation and planning for their children, and in a support system among all the parents.

In addition to measures of child progress, parent attitudes were measured at several intervals during intervention, and behavioral observations were made by program staff. Parent attitude survey results revealed that, over the course of the program, parents placed greater importance in their role in promoting child progress. Mothers demonstrated a tendency to speak more realistically about their children's conditions. Behavioral observations indicated that mothers began to interact with their infants in more positive ways over the course of intervention. The author stated that mothers progressed from withdrawal behaviors to active, positive interaction. This positive interaction took on more behaviors also; mothers would talk and play with their babies as well as hold them. Mothers were also observed to be more related with their infants.

In another program, a parent education program was implemented to reduce the delays observed among preterm infants of teen-aged mothers (Field, et al., 1980). This program dealt primarily and intensively with the mother in training her to care for and interact with her infant. Follow-along assessments were made of both mother and child at four-month intervals.

After eight months, mothers who received intervention expressed more realistic developmental expectations of their infants, and more desirable child-rearing attitudes. These mothers also rated their infants' temperaments as less difficult. Those infants whose mothers had received intervention had greater weight and length measurements than control children. Denver Developmental Scale scores were also higher among intervention than control infants.

The KIDS (Kindling Individual Development Systems) Program was developed by the Dallas Independent School District for handicapped infants, toddlers, preschool children and their families (Mullen, Gilliam, & Rogers; 1980). The administration and organization of this model program was built around three groups: children, parents, and staff. The program used a specifically developed curriculum including an assessment instrument with corresponding instructional activities as well as a structured parent training program.

Project KIDS served children and their families in three instructional settings. Infants (aged birth-2 years) were served in a home-based program which included intensive parent training. Toddlers (aged 2-3 years) were served in a part-day center-based setting with continued parent involvement. Preschoolers received services in a full-day regular school setting. Parents of preschool children received separate training at their discretion.

Short-term impact of the program was investigated using a pretest-posttest methodology with each child used as his own theoretical control (Rogers, 1979). Investigation by this method indicated the program was effective in promoting developmental progress.

A final intervention program provided services through a series of weekly visits to the family (Barna, et al., 1980). The target of this program was the handicapped child, though the parent was utilized as a change agent. Over the course of intervention, a home advisor visited the parents and demonstrated techniques for enhancing the cognitive and physical development of their children. Posttest evaluations indicated that environmentally deprived infants made the greatest gains, followed by the non-specific developmental delay and Down's syndrome handicap groups. Those infants with more severe physical handicaps, such as cerebral palsy or visual handicaps, demonstrated the slowest progress. The data indicated no relationship between chronological age when intervention began and subsequent progress.

The authors inferred from these results that, while the program did have an impact which was not lost, the program was not sufficient to offset the home environments of the children. They further suggested that greater impact might be effected through greater involvement of the parents.

To summarize, reviews of those programs utilizing the parent as the primary change agent indicate that they are typically effective. All six programs studied reported gains in child progress on cognitive measures, and several reported improvement in parent self-esteem and competence.

Discussion of the Literature

Introduction

Research in infant and child development has established that all children follow a specific developmental sequence in acquiring physical, emotional, and cognitive skills. In his series on child development, Gesell (1952) demonstrated that the infant or child must develop certain capabilities of a given skill before he can begin acquisition of a new, related skill. An example of Gesell's premise would be that the infant must develop physical strength and coordination before learning to crawl. In turn, crawling must precede creeping, and both skills must be mastered before learning to walk.

In the emotional/psychological realm, psychoanalytically oriented professionals have postulated that the development of personality is a result of the successful completion of a specific developmental sequence (Mordock, 1979). These professionals believed that specific emotional disorders were a result of disruptions at specific periods during the psychological developmental sequence. As with physical development, it is necessary to complete each stage of the developmental sequence in order to become an adequate, stable adult.

The concept of a specific sequence has also been demonstrated to exist in cognitive development. Piaget (1960) demonstrated that the child's cognitive development not only follows a specific sequence from one phase to the next, but that each phase has a specific, invariant sequence itself. In his theory, Piaget stated that the child is an active learner, and will seek opportunities to act on the environment. By acting on the environment, the infant or child would master the environment through assimilation and accommodation.

Tjossem (1976) concurred with Piagetian theory and stated that handicapped and "at risk" children are also active learners. While the handicapped child would instinctively attempt to follow the same developmental sequence as his nonhandicapped counterpart, his handicap denied him some of the resources available to the normal child. The result of his attempts to act on the environment was often the development of inadequate or inappropriate skills strategies. These behaviors not only made the child different from his nonhandicapped peers, but often precluded preschool and regular education.

Schaefer et al. (1980) and Bricker (1978) both presented evidence that the handicapped or at risk infant does not begin the developmental process equally with the normal infant. The premature infant must first overcome the physical and neurological trauma of premature birth, then "catch up" to the competence level of his gestational age (Schaefer et al., 1980). Similarly, the physically handicapped child must learn to master the developmental process without a complete intact sensory or motor system. The result of such deficits was that the handicapped infant mastered developmental milestones much more slowly than the normal child (Bricker, 1978; Tjossem, 1974).

Mordock (1979) further stated that the limitation of a handicap affected the psychological developmental process. The handicapped child, especially the physically handicapped child, is unable to progress through normal psychosocial developmental processes. Particularly affected are the attachment and separation-individuation phases. The infant does not have the facilities to respond as intensely in the typical mother-infant relationship. Hence, the typical mother-infant relationship would not be adequate to promote appropriate psychosocial development in the infant. The results of an inadequate developmental

process are, among other things, low stress tolerance, attentional deficits, and immaturity, which compound any limitations created by the handicap alone.

The cognitive deficits of handicapped and at risk infants and children have been well-documented (Bronfenbrenner, 1974; Tjossem, 1974; Lazar & Darlington, 1978; Schaefer et al., 1980; Bricker, 1978). These cognitive deficits are often not a direct result of the handicapping condition but rather a product of many indirect factors (Schaefer, et al., 1980; Mordock 1979). For example, the orthopedically handicapped child should not, because of this handicap, perform poorly on standardized intelligence tests. The physical handicap does not produce limitations that are confined to the child's physical faculties, however. The handicap has made it difficult for the child to develop such concepts as object permanence and conservation. Both of these concepts are critical to abstract thought and problem-solving skills measured by standardized intelligence tests. The development of these two particular concepts is also the basis of attachment and separation-individuation. Hence, the physically handicapped child is deficient in many ways <u>indirectly</u> related to his handicap: (a) he first has a physical limitation, (b) which limits his ability to fully explore and understand his world, and (c) and which therefore impedes the appropriate development of concepts and skills in cognitive and pyschosocial areas.

Physically handicapped children have not been the only group demonstrating developmental deficits. Several authors have demonstrated that children from low socioeconomic backgrounds and from ethnic minority groups have also been overrepresented in special education populations.

There are several hypotheses as to why these groups have demonstrated delayed development. Bronfenbrenner (1974) suggested that typical performance measures (Standford-Binet, WISC, achievement tests) are culturally biased in favor of white, middle-class children and have never tapped the adaptive skills of minority and disadvantaged children. This explanation may be plausible, but cannot account for deficits in motor or language development. Other investigators suggested that the environments of these children did not enhance development, and may in fact have impeded it.

What are the Historical Bases of Early Intervention?

During the late 1950's and 1960's several early intervention programs were instituted (Bricker, 1978). These programs, particularly Head Start, were geared toward socioeconomically disadvantaged children. While these programs held great promise, early research indicated that experimental groups sustained gains only so long as intervention lasted. Gains on tests of cognitive ability decreased after intervention until experimental groups were no longer significantly different from controls. Palmer (1977) suggested that these programs did in fact have an impact. However, this impact was not limited to improved cognitive functioning. Rather, the impact was greater in social and motor areas and would not be reflected in standardized cognitive measures.

While initial evaluations of early intervention programs did not indicate that participants made significant gains, many researchers continued to develop and implement programs for these children. Over time, follow-along studies of these programs indicated some benefits in terms of reducing the need of later special services to these children (Lazar & Darlington, 1978). With the advent of Public Law 94-142,

several programs expanded to include handicapped children as well as at risk children. Again, research demonstrated that early services could offset later developmental deficits.

Early studies of intervention services distinguished between two types of programs: home-based individual services, and center-based, group services. This distinction appeared to be a logical one. However, later investigations indicated that the effects of these programs were confounded by another variable: age (Bronfenbrenner, 1974).

Bronfenbrenner (1974) conducted an analysis of several early intervention programs and found that whether a child would benefit from a home-based or center-based program was determined by his age at entry into the program. Those children entering a program as infants derived greater benefits when the program was home-based, providing individual, developmentally appropriate services. Children entering programs at later ages benefitted more from center-based group services.

Another variable was also found to impact program success (Bronfenbrenner, 1974; Lazar & Darlington, 1978). Parent involvement in a child's age-appropriate program could further enhance child progress. Several investigators held that this finding was quite logical in light of normal child development. A normally developing child would typically spend a good deal of his waking time in individual activities with his mother. Later, as the child attained new levels in his development, he would participate in more socially oriented activities, and peers would become more central in his experiences. As a result of these findings, the home-center distinction has given way to a distinction between infant services and preschool services.

What are the Current Trends in Early Intervention?

Bronfenbrenner (1974), Lazar and Darlington (1978), and Schaefer et al. (1980) all concluded that the most effective early intervention programs were those which facilitated a normal developmental sequence. In addition to facilitating more normal development, infant programs were found to be most effective when intervention involved the parent as the primary agent of change. Utilizing the parent as the primary change agent not only further enhanced developmental progress but also provided the child with parent-child experiences which were critical to psychological development. Mordock (1979) stated that the immaturity demonstrated by many handicapped and at risk children was a result of inadequate or disrupted parent-child relationships, and hence, disrupted child development.

What Programs Have Been Developed to Serve this Population?

There have been a variety of programs serving handicapped and at risk children and their families. The emphasis of each program varied as a result of the time during which the program originated and new insights that were gained through investigations.

The Early Training Project in Nashville, Tennessee, was implemented in 1961 to serve children who were at risk due to deprived socioeconomic backgrounds (Gray & Klaus, 1970). The program consisted of summer school in which academic skills as well as attitudes toward achievement were emphasized. Progress records were kept through follow-along testing over the three year course of the program, and follow-up testing for three years after program termination.

Those children receiving intervention sustained significant gains over controls during intervention. These participant differences

declined slightly after program termination but remained significantly higher than controls through the third year follow-up testing.

Another program implemented to enhance cognitive development of Spanish-American children from low-income families also found that intervention services were effective (Cornett et al., 1974). A six-year follow-up study indicated that the program also demonstrated long-range impact (Cornett & Askins, 1978). Of 36 children followed, 34 were performing successfully in regular school settings.

The Harlem Research Center found that at risk preschool children served in a seven-week intervention program sustained academic gains over controls through follow-up in the fifth grade (Palmer, 1977). Investigators found that 78% of program participants were at or above grade level, while only 55% of controls were at or above grade level.

The Perry Preschool Project in Ypsilanti, Michigan, is the only program to date which has systematically followed subjects through adolescence. Like most of the early programs, the subjects of this program were economically disadvantaged preschoolers. Initial investigations of student progress revealed that program participants made significant gains over controls, but that these gains were no longer significant one year after program termination (Palmer, 1977). However, by age 15, program participants demonstrated significantly higher academic performance than controls, required fewer special services, and demonstrated fewer behavior problems (Education USA, 1980).

Earlier programs tended to focus on the cognitive development of preschoolers and placed less emphasis on parent involvement. Later programs began attending to other areas of development, the possibility of extending services to younger children, and the importance of parent

involvement. While the degree of family involvement varied, many researchers found that parental involvement, especially with younger children, was extremely effective.

One program involving both a parent and her child was found to be quite successful (Karnes, et al., 1970). In addition to promoting greater interaction between parents and their children, parents also participated in activities designed to increase self-concept and develop more adaptive coping skills.

Both children and their parents benefitted from this program. Children participating in the program obtained significantly higher standardized test scores than did controls. In fact, participating children also obtained significantly higher test scores than their siblings. Mothers participating in the program developed greater self-confidence as evidenced by their increased activity in the parent groups and by their initiated and later increased community involvement.

The Sheltering Arms Day School provided information and support services to parents of retarded children (Warfield, 1975). A survey of participating parents revealed that the parent services had been an important component of the program. Mothers responded that information on retardation had greatly helped them in dealing with their children. Support services had helped parents deal with disruptions in family life as well as with personal feelings regarding the retarded child.

Another early intervention program provided not only parent training, but also included parents as change agents in their children's program (Lynch, 1976). Parent attitudes were assessed at regular intervals during intervention to determine program effectiveness. Parent responses indicated that they became more realistic in their attitudes toward their children and their expectations of them. Observation of

parents revealed increased interactions between them and their children. This increased interaction included increased verbalizations as well as physical activity.

One program dealing only with parents indicated again that child progress can be affected as a result of parent change (Field et al., 1980). This program provided training and support services only to mothers, while providing no direct services to children. As in the Lynch study, parents demonstrated more realistic expectations of their children after intervention, and more realistic child rearing attitudes in general. Children of program participants obtained significantly higher scores on standardized developmental inventories, further suggesting the effectiveness of parent intervention.

Finally, the Project KIDS program has provided training services to parents in addition to children's services. Parent reactions to a recent survey indicated consistently positive reaction toward the program both in terms of their children's progress and the support services which were provided to parents (Mullen et al. 1980).

What Methodologies have been Used in Investigating Early Intervention Programs?

Perhaps the most frequently used methodology in studying program impact has been the pretest-posttest control group design (Campbell & Stanley, 1963). Using this method, children are randomly assigned to treatment and control groups, then compared before, during, and following intervention. Investigators of one program added a second control group to mediate the effects of social factors relating to intervention (Gray & Klaus, 1970). To further control for maturational factors, the design was expanded to include a Time Series methodology.

While this method might be ethically used with socioeconomically disadvantaged children, Public Law 94-142 states that services cannot be denied to handicapped children. Hence, any handicapped children who are identified must be offered services, making the practice of using an experimental control group ethically impossible. As a means of ethically dealing with handicapped students and still conducting scientific investigations of program effectiveness, the concept of using each child as his own control was introduced (Tjossem, 1974; Cornett & Askins, 1978; Macy, 1978).

Cornett and Askins (1978) suggested a secular trend methodology, in which a trend line of predicted post-intervention scores was plotted. These expected scores are then compared with observed scores to determine program effectiveness. Results of studies using only this methodology must be considered tentative since there was no comparison to post-test scores when no intervention was provided.

The theoretical control group study does provide a comparison to an identical group which received no treatment (Macy, 1978). Macy developed a method by which a panel of child development experts could predict the the non-intervention developmental progress of each child. The judges demonstrated high interrater reliability using this method.

Bagnato and Neisworth (1980) suggested that, in addition to control group comparisons, the efficiency of the program could be estimated by assessing developmental gains in light of the duration of intervention. Simeonsson and Huntington (1980) believed that behavioral and temperamental gains over the duration of intervention were more indicative of program effectiveness than cognitive gains. Several investigators suggested that anecdotal records could provide sufficient

accurate data to determine program effectiveness. While all these strategies may be useful, the confidence in the findings of studies using only these methods would be tentative.

What Were the Results of Previous Investigations?

Based on the present review of early intevention programs, several major findings emerge.

1. Early intervention did have a positive effect on development for both "at risk" and handicapped children. Often the gains made by program participants have been sustained for many years.
2. While program impact has not always been manifested in specific academic areas, program effects have been evident in the general academic and social performance of program participants. One such example of program impact has been that of the Perry Preschool Project in which program participants demonstrated better academic performance than controls. The more conspicuous evidence of program impact, however, was in the reduced need of special services later, and reduced incidence of behavior problems of program participants in comparison to controls.
3. Intervention which included the parent greatly enhanced progress already effected by a program. Parent involvement was found to be especially effective in programs with very young children, particularly infants.
4. The effectiveness of a single instructional setting varied as a function of the child's age. Those programs which had demonstrated the greatest success were those which followed and enhanced the normal developmental sequence. Hence, infants derived the most benefit from home-based programs with intense

parent involvement, toddlers benefitted from group-oriented programs which maintained parent involvement, and preschoolers profited from group programs which utilized parent involvement but which introduced academic skills in addition to other developmental activities.

5. While early intervention programs require funds to operate, and require bigger budgets as more services are offered, long-range costs of such programs are low. Several studies have demonstrated that at risk and handicapped children participating in early intervention programs often required fewer school and community services in later years.

What Variables have been Associated with Program Success?

Several variables have been identified as significant predictors of child progress, and, hence, program success.

1. Age at entry into the program: typically, younger children derive greater benefit from early intervention programs. This variable is however, related to parent involvement (Bronfenbrenner, 1974).
2. Parent involvement: as parent involvement increased, in terms of direct involvement in the program, so did child progress.
3. Duration of participation: those children participating continuously for more than one year sustained greater gains than those participating for one year or less, or those children participating discontinuously for more than one year (Gray & Klaus, 1970).
4. Number of children per adult: for center-based participants, those in small classes sustain greater gains than those in larger classes (Lazar & Darlington, 1978).

Methodology

Past study has indicated that the deficits experienced by handicapped children result from disruptions of development at many points. Many previous studies have speculated that program impact is manifested in several areas other than cognitive or academic ones. As a result of this speculation, several researchers have called for the investigation of variables relating to other areas of development. Frequently cited among these variables are the social and physical development of the child, and social variables related to the family structure. Among the general hypotheses of program impact are that intervention with the family will result in improved coping skills (with regard to the handicapped child) and improved stability of the family structure as a result of more adaptive coping skills. Once the family experiences fewer disruptions, the child will improve in the areas of social skills development, physical skills development, and cognitive/language skills development.

The proposed study has been designed to address these hypotheses. Social, physical, and cognitive variables will be investigated to determine child progress during the course of intervention. Families will be interviewed annually to assess changes in family structure and stability over the course of intervention. Analysis of these variables will provide a more comprehensive picture of the long-range effects of infant education on non-academic as well as academic development of program participants.

Subjects

The subjects in the longitudinal study data base will be gathered over a course of two years. During the 1981-1982 school year, all

children enrolled after August 24, 1981, and before February 12, 1982, who are less than 24 months of age will be included in the study. These time constraints are necessary to ensure that each child will have had at least two KIDS Inventory administrations during the 1981-1982 school year. This same procedure will be employed during 1982-1983 so that at least 15 students may be included in each of the subject groups.

The subjects will be divided into four groups, defined by their ages upon entry into Project KIDS:

Group A	Birth through 6 months of age at the time of enrollment
Group B	6 months, one day, through 12 months of age at the time of enrollment
Group C	12 months, one day, through 18 months of age at the time of enrollment
Group D	18 months, one day, through 24 months of age at the time of enrollment

Fathers and mothers of the children under study will comprise the second major group investigated. In some instances, grandparents, relatives, or other persons who share in caretaking responsibilities for the child will be included in activities with parents.

Instruments

Several areas of development and intervention will be investigated for child and parent groups. All instruments, their sources, and present purposes are presented in Table 2.

Design and Data Analysis

Table 3 presents a schedule of data collection activities through the completion of three follow-up testings of students after the termination of Project KIDS services. At the time of the third follow-up testing, the approximate age of each student will be 13 to 14 years old. The total time required to follow students will be 16 years.

Table 2

Instruments to be Used For Longitudinal Data Collection

Instrument	Source	Purpose
Student Model Implementation Review (SMIR)	DISD Special Education Research and Evaluation Dallas, Texas 75204	To investigate the extent to which resources of the Project KIDS have been implemented with each child.
Student Educational Services Review (SESR)	DISD Special Education Research and Evaluation Dallas, Texas 75204	To determine the extent of special services needed by the student during years after termination of Project KIDS services.
KIDS Inventory of Development Scale	Project KIDS, DISD Dallas, Texas 75204	To be used in the investigation of developmental progress during Project KIDS intervention. Each of the four subscales will be analyzed separately to determine gains in each area.
Wechsler Intelligence Scale of Children - Revised Edition (WISC-R)	The Psychological Corporation New York, New York 10017	To investigate cognitive ability during follow-up after Project KIDS intervention.
Vineland Social Maturity Scale	American Guidance Service, Inc. Circle Pines, MN 55014	To provide standardized information regarding adaptive social functioning.
Adaptive Behavior Scale (ABS)	American Society on Mental Deficiency Washington, DC 20016	To provide standardized information regarding adaptive social functioning. This instrument is considered to be more reliable and comprehensive than the Vineland; however, the scale does not extend below 6 years of age.

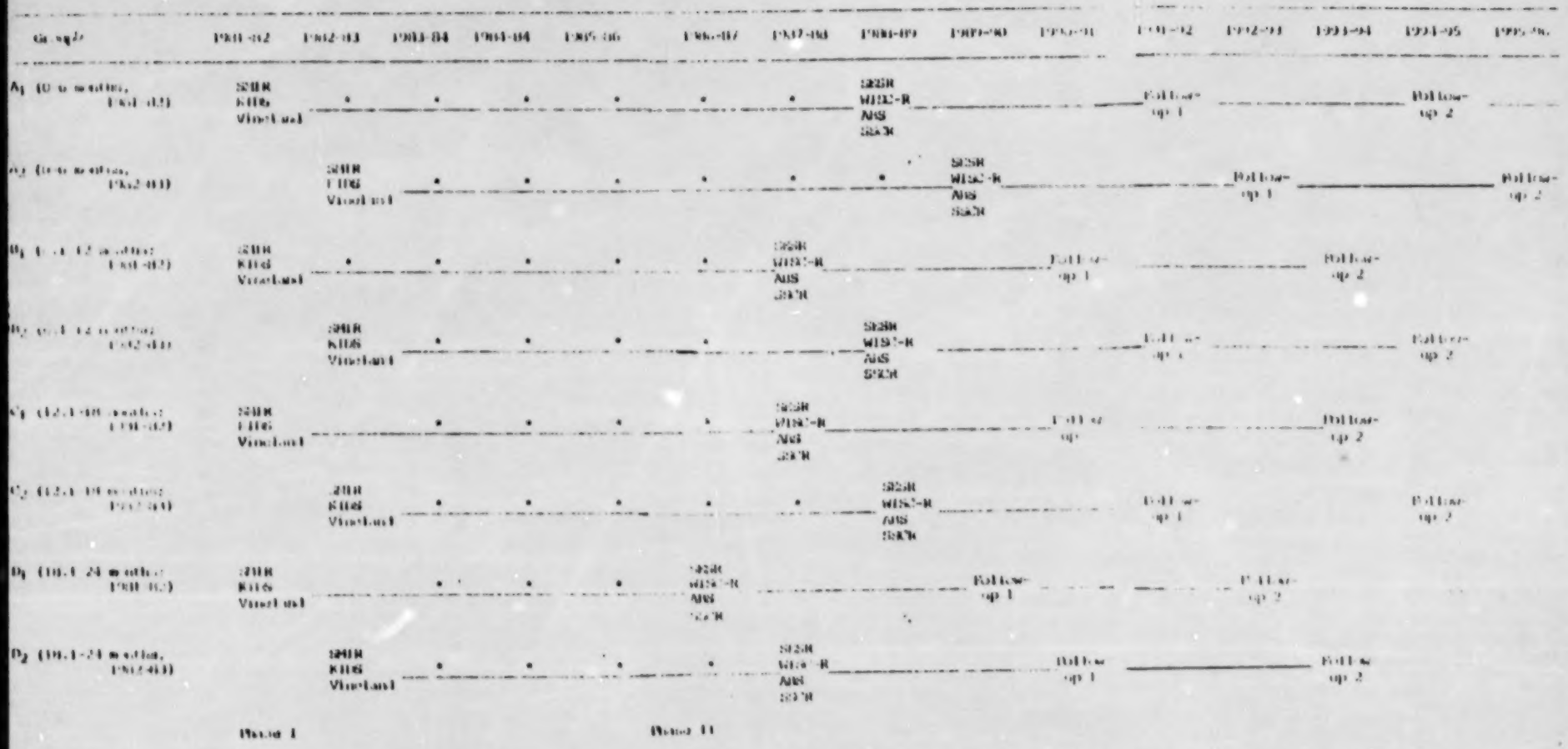
Table 2

Instruments to be Used For Longitudinal Data Collection
(continued)

Instrument	Source	Purpose
Student Social Characteristics Review (SSCR)	DISD Special Education Research and Evaluation Dallas, Texas 75204	To provide information regarding the social activities in which students participate. Includes extra curricular school activities as well as non-school-related organizations and activities, honors and awards. Also includes reports of antisocial acting out.
Family Model Implementation Review (FMIR)	DISD Special Education Research and Evaluation Dallas, Texas 75204	To provide information regarding the extent of services provided to parents, and the extent to which parents accepted and used these services.
Demographic and Sociological Information (DSI) Survey	DISD, Psychological Services, Dallas Texas, 75204	To provide information regarding the structure and nature of the family.
Family Social Adjustment Review (FSAR)	DISD Special Education Research and Evaluation, Dallas, Texas 75204	To investigate changes in the family structure and stability, and the degree of their coping and social skills.

Table 3

Data Collection Schedule
Longitudinal Follow-Ups[a]



NOTE: • Data collection period
Interim periods not listed.
[a]Data collections to be rescheduled during May of each year indicated.
[b]Age ranges at intervals in each group

The longitudinal methodology will be considered to have two phases: that time during which students receive Project KIDS services (Phase I), and that time after termination of Project KIDS services beginning at six years of age (Phase II). During Phase I, students will be tested using the KIDS Inventory of Development and the Vineland Social Maturity Scale. As set forth in the Project KIDS Model Implementation Manual, the KIDS Inventory will be administered quarterly to each student by his or her teacher. The Vineland Scale will be administered to parents by either the child's teacher, another trained member of the Project KIDS staff, or a trained member of the KIDS evaluation staff. The Student Model Implementation Review will be used by Project KIDS evaluation staff to survey student records and determine the extent of services provided.

Parents of Project KIDS will also be contacted annually during Phase I of the longitudinal study. In addition to acting as informants for the Vineland Scale, mothers and fathers will be asked to respond to the Family Social Adjustment Review and an attitude change instrument. The Family Model Implementation Review will be used to determine the extent to which family services were provided by Project KIDS staff and accepted by parents.

All data collection activities during Phase I of the study will be conducted annually each May. To summarize, these activities will include collection of KIDS Inventory scores, review of student and family records, and mother and father interviews.

During Phase II, data collection schedules will be staggered according to the different ages of the students. Again, Table 3 depicts the schedule by which Project KIDS "graduates" will be tested. Upon enrollment in grade one, or other education program, students will be

assessed using the Wechsler Intelligence Scale for Children, Revised edition (WISC-R), and the Adaptive Behavior Scale (ABS). School records will be surveyed using the Student Education Services Review (SESR). The SESR is the Phase II counterpart to the SMIR in that it surveys the type and extent of education services provided to the student. The Student Social Characteristics Review (SSCR) will be completed using the students' school records, teacher and family reports.

Mothers and fathers of students will continue to be surveyed using the aforementioned instruments. After the initial Phase II data collection as each child enters grade one, follow-up data collection will be reduced to once every three years and will be conducted in May. For those children receiving special services throughout the period of the longitudinal study, review for special services must be conducted at three-year intervals. Hence, data for these children will be routinely collected by school personnel. Data for students not requiring case review will be collected by Project KIDS evaluation staff.

Discussion

Recent research has indicated that developmental/educational intervention with handicapped infants can and frequently does have far-reaching effects. While several reports support the contention that intervention has as much impact on the child's social/affective development as on his cognitive development, no studies have comprehensively and systematically investigated social/affective outcomes of these program participants.

The proposed study has provided a comprehensive research strategy for the longitudinal study of outcomes in social/affective and cognitive areas. This study will entail an annual follow-along of students during

participation in an infant education program, then three-year follow-up after termination of infant education. Implementation of the proposed research strategy would likely require one full-time professional to supervise data collection and maintain a computerized file of those data.

Few studies published to date have addressed such long-term (sixteen-year) developmental progress of handicapped children who receive intervention services. Certainly no studies have dealt adequately with the non-academic development of these children. If resources could be allocated for implementation, the proposed study would constitute a major contribution to child development disciplines.

References

American Psychological Association, Publication Manual (2nd ed.). Baltimore: Garamond/Pridenmark Press, Inc., 1974.

Barna, S., Bidder, R., Gray, O., Clements, J., & Gardner, S. The progress of developmentally delayed prechool children in a home training scheme. Child: Care, Health, and Development 1980, 6, 157-164.

Bagnato, S., & Neisworth, J. The intervention efficiency index: an approach to preschool program accountability. Exceptional Children, 1980, 46(4), 264-269.

Bricker, D. Early intervention: the criteria for success. Allied Health and Behavioral Science Journal, 1978, 1, 567-582.

Bricker, D., & Casuso, V. Family involvement: a critical component of early intervention. Exceptional Children, 1979, 46(2), 108-116.

Bronfenbrenner, U. Is early intervention effective? Teacher's College Record, 1974, 76(2), 279-303.

Campbell, D., & Stanley, J. Experimental and Quasi-experimental Designs for Research. Chicago: Rand McNally, 1963.

Cornett, J., Ainsworth, L. & Askins, B. Effect of an intervention program on "high-risk" Spanish-American children. Journal of Educational Research, 1974, 67(8), 342-343.

Cornett, J., & Askins, B. The long range effects of a "special" intervention program for low birth weight children: some findings and methodologies. Paper presented at the annual meeting of the American Educational Research Association, Toronto, Ontario, Canada, 1978 (ERIC Document Reproduction Service #ED 152 018).

Farran, D., Haskins, R., Gallagher, J. Poverty and mental retardation: a search for explanations. New Directions for Exceptional Children, 1980, 1, 47-65.

Field, T., Widmayer, S., Stringer, S., & Igantoff, E. Teenage, lower-class, black mothers and their preterm infants: an intervention and developmental follow-up. Child Development, 1980, 51, 426-436.

Gesell, A. Infant Development: The Embryology of Early Human Behavior, New York: Harper & Row, 1952.

Glass, A. & Smith, M. Meta-analysis of research on class size and achievement. Educational Evaluation and Policy Analysis, 1979, 1(1), 2-16.

Gray, S. & Klaus, R. An experimental preschool for culturally deprived children. Child Development, 1965, 36, 887-898.

Gray, S. & Klaus, R. The early training project: a seventh year report Child Development, 1970, 41, 909-924.

Jackson, G. Methods for integrative reviews. Review of Educational Research, 1980, 50(3), 438-460.

Karnes, M., Teska, J., Hodgins, A., & Badger, E. Educational intervention at home by mothers of disadvantaged children. Child Development, 1970, 41, 925-935.

Klaus, R. & Gray, S. The early training project for disadvantaged children: a report after five years. Monographs of the Society for Research in Child Development, 1968, 33(4), (Ser. No. 120).

Lazar, I. & Darlington, R. Lasting effects after preschool. Report of the Consortium for Longitudinal Studies, 1978. (ERIC Document Reproduction Service No. ED 175 523).

Light, R. & Smith, P. Accumulating evidence: Procedures for resolving contradictions among different research studies. Harvard Educational Review, 1971, 41, 429-471.

Lynch, E. Measuring parental involvement in an early intervention project. Paper presented at the Annual International Convention of the Council for Exceptional Children, Chicago, 1976. (ERIC Document Reproduction Service No. ED 127 768).

Macy, D. Project KIDS theoretical control group study (SP78-110-31-08). Dallas, Texas. Dallas Independent School District, Department of Research, and Evaluation, and Information Systems, 1978.

Menolascino, F. Handicapped children and youth: current-future international perspectives and challenges. Exceptional Children, 1979, 46(3), 168-173.

Mordock, J. The separation-individuation process and developmental disabilities. Exceptional Children, 1979, 46(3), 176-184.

Mullen, M., Gilliam, D., & Rogers, A. The evaluation of the 1979-80 implementation of the KIDS model program (SE80-116-31-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, 1980.

Palmer, F. The effects of early childhood intervention. Paper presented at the Annual Meeting of the American Association for the Advancement of Science, 1977. (ERIC Document Reproduction Service No. ED 143-427).

Piaget, J. The general problems of the psychobiologial development of the child. In Tanner & Inhelder (eds). Discussions on Child Development. London: Tanstock Publications, 1960.

Prechool education pays off for poor students, study says. Education USA 1980, 23(17), pp. 129, 131.

Rogers, A. Second level project KIDS theoretical control study (SP79-412-31-08). Dallas, Texas: Dallas Independent School District, Department of Research and Evaluation, 1979.

Schaefer, M., Hatcher, R., & Barglow, P. Prematurity and infant stimulation: a review of research. Child Psychiatry and Human Development, 1980, 10(4), 199-213.

Shapiro, L., Gordon, R., & Neiditch, C. Documenting change in young multiply handicapped children. Journal of Special Education, 1977, 11(2), 245-257.

Simeonsson, R. & Huntington, G. Correlates of developmental progress in handicapped infants and children. Paper presented at the international conference on Infant Studies, New Haven, April, 1980.

Tjossem, T. Intervention Strategies for High Risk Infants and Young Children. Baltimore: University Park Press, 1976.

Walzer, S., Wolff, P., Bowen, D., Silbert, A., Bashir, A., Park, S., & Richmond, J. A method for the longitudinal study of behavioral development in infants and children: the early development of XXY children. Journal of Child Psychology, Psychiatry, and Allied Disciplines, 1978, 19, 213-229.

Warfield, G. Mothers of retarded children review a parent education program. Exceptional Children, 1975, 41(8), 559-562.

APPENDIX

Sources Identified for the Longitudinal Study Literature Review

Barna, S., Bidder, R., Gray, O., Clements, J., and Gardner, S. The Progress of developmentally delayed preschool children in a home training scheme. Child: Care, Health, and Development, 1980, 6, 157-164.

Bagnato, S. & Neisworth, J. The intervention efficiency index: an approach to preschool program accountability. Exceptional Children, 1980, 46(4), 264-269.

Bricker, D. Early intervention: the criteria for success. Allied Health and Behavioral Science Journal, 1978, 1, 567-582.

Bricker, D. & Bricker W. Infant, toddler, and preschool research and intervention project report-year III IMRID Behavioral Science Monograph No. 23. (ERIC Document Reproduction Service No. ED 089 529).

Bricker, D. & Casuso, V. Family involvement: a critical component of early intervention. Exceptional Children, 1979, 46(2), 108-116.

Cornett, J., Ainsworth, L., & Askins, B. Effect of an intervention program on "high-risk" Spanish-American Children. Journal of Educational Research, 1974, 67(8), 342-343.

Cornett, J., & Askins, B. The long range effects of a "special" intervention program for low birth weight children: some findings and methodologies. Paper presented at the annual meeting of the American Educational Research Association, Toronto, Ontario, Canada, 1978 (ERIC Document Reproduction Service No. ED 15201).

Farran, D., Haskins, R., & Gallagher, J. Poverty and mental retardation: a search for explanations New Directions for Exceptional Children, 1980, 1, 47-65.1

Field, T., Widmayer, S., Stringer, S., & Iganloff, E. Teenage, lower-class black mothers and their preterm infants: an intervention and developmental follow-up. Child Development, 1980, 51, 426-436.

Gesell, A. Infant Development: The Embryology of Human Behavior. New York: Harper & Row, 1952.

Glass, G. & Smith, M. Meta-analysis of reseach on class size and achievement. Educational Evaluation and Policy Analysis, 1979, 1(1), 2-16.

Goodson, B & Hess, R. The effects of parent training programs on child performance and parent behavior. (ERIC Document Reproduction Service No. ED 136 912).

Gordon, I. An early intervention project: a longitudinal look. Paper presented at the Merrill-Palmer Conference on Research and Teaching of Infant Development, 1973. (ERIC Document Reproduction Service No. ED 093 498).

Gordon, I. The Florida parent education early intervention projects: a longitudinal look. 1975 (ERIC Document Reproduction Service No. 100 492).

Gordon, I. & Guinaugh, B. A home learning center approach to early stimulation. Final report to the Office of Child Development, DHEW, 1976. (ERIC Document Reproduction Service No. ED 135-469).

Guinaugh, B. & Gordon, I. School performance as a function of early stimulation. (ERIC Document Reproduction Service No. 135 469).

Gray, S. & Klaus, R. An experimental preschool for culturally deprived children. Child Development, 1965, 36, 887-898.

Gray, S. & Klaus, R. The early training project: a seventh-year report. Child Development, 1970, 41, 909-924.

Gueney, Stover. On educating disadvantaged parents. Community Mental Health Journal, 1978, 3, 66-72.

Hogg & Mittler (eds.) Advances in Mental Handicap Research, New York: Wiley & Sons, 1979.

Jackson, G. Methods for integrative reviews. Review of Educational Research, 1980, 50(3), 438-460.

Karnes, M., Teska, J., Hodgins, A., & Badger, E. Educational intervention at home by mothers of disadvantaged children. Child Development, 1970, 41, 925-935.

Klaus, R. & Gray, S. The early training project for disadvantaged children: a report after five years. Monographs of the Society for Research in Child Development, 1968, 33(4), (Ser. No. 120).

Lazar, I. & Darlington, R. Lasting effects after preschool. Report of the Consortium for Longitudinal Studies, 1978 (ERIC Document Reproduction Service No. ED 175 523).

Lazar, J. & Chapman, J. Early childhood research and development needs, and gaps in federally funded intervention studies within a longitudinal framework. Paper prepared for the Interagency Panel on Early Childhood Research and Development, 1972. (ERIC Document Reproduction Service No. ED 088 577).

Light, R. & Smith, P. Accumulating evidence: Procedures for resolving contradictions among different research studies. Harvard Educational Review, 1971, 41, 429-471.

Lynch, E. Measuring parental involvement in an early intervention project. Paper presented at the Annual International Convention of the Council for Exceptional Children, Chicago, 1976. (ERIC Document Reproduction Service No. ED 127-768).

Menolascino, F. Handicapped children and youth: current-future international perspectives and challenges. Exceptional Children, 1979, 46(3), 168-173.

Mordock, J. The separation-individuation process and developmental disabilities. Exceptional Children, 1979, 46(3), 176-184.

Palmer, F. The effects of early childhood. Paper presented at the Annual Meeting of the American Association for the Advancement of Science, 1977 (ERIC Document Reproduction Service No. ED 143 427).

Preschool education pays off for poor students, study says. Education USA, 1980, 23(17), pp. 129, 131.

Reisinger et al. Parents as change agents for their children. Journal of Community Psychology, 1978, 4, 103-123.

Schaefer, M., Hatcher, R., & Barglow, P. Prematurity and infant stimulation: a review of research. Child Psychiatry and Human Devlopment, 1980, 10(4), 199-213.

Shapiro, L., Gordon, R., & Neiditch, C. Documenting change in young multi ply handicapped children. Journal of Special Education, 1977, 11(2), 245-257.

Simeonsson, R. & Huntington, G. Correlates of developmental progress in handicapped infants and children. Paper presented at the International Conference on Infant Studies, New Haven, April, 1980.

Stedman, D., et al. How can effective early intervention programs be delivered to potentially retarded children? (ERIC Document Reproduction Service No. ED 087 187).

Tjossem, T. Intervention Strategies for High Risk Infants and Young Children. Baltimore: University Park Press, 1976.

Walzer, S., Wolff, P., Bowen, D., Silbert, A., Bashir, A., Park, S., & Richmond, J. A method for the longitudinal study of behavioral development in infants and children: the early development of XXY children. Journal of Child Psychology, Psychiatry, and Allied Disciplines, 1978, 19, 213-229.

Warfield, G. Mothers of retarded children review a parent education program. Exceptional Children, 1975, 41(8), 559-562.

Zehrbach, R. R. Determining a preschool handicapped population. Exceptional Children, 1975, 42(2), 76-83.

Acknowledgement

The studies reported in this document could not have been completed without the excellent cooperation and assistance of the administrators and professional staff in the Dallas Independent School District, especially that provided by Dr. Allen R. Sullivan, Student Services and Dr. Ruth M. Turner, Exceptional Children and Youth Services.